



ASHESI UNIVERSITY COLLEGE

**THE DETERRENTS OF CANNABIS USE AMONG UNIVERSITY STUDENTS: A
CASE STUDY OF ASHESI UNIVERSITY COLLEGE**

ELIKEM HOTTOR

2015

98052015

THESIS

ASHESI UNIVERSITY COLLEGE

**THE DETERRENTS OF CANNABIS USE AMONG STUDENTS: A CASE STUDY
OF ASHESI UNIVERSITY COLLEGE**

By

ELIKEM HOTTOR

Thesis submitted to the Department of Business Administration, Ashesi University
College. In partial fulfillment of the requirements for the award of the Bachelor of
Science degree in Business Administration

APRIL, 2015.

Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:

Candidate's Name: Elikem Hottor

Date: April 24, 2015.

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by Ashesi University College.

Supervisor's Signature:

Supervisor's Name: Dr. Sena Afi Agyepong

Date: April 24, 2015.

Acknowledgement

I am thankful to God for the good health and strength that were necessary to begin and complete this thesis.

I wish to express my heartfelt appreciation to Dr. Sena Agyepong for patiently providing me with all the necessary guidance and encouragement for the research.

I am also grateful to Professor Benony Gordor, Dr. Edgar Cooke, Dr. Oduro Frimpong, Mr. Abeeku Sam, Miss Theresa Dei-Dzanie and Mr. Marvin Kotei. I am extremely thankful for their expert advice and feedback.

I take this opportunity to express gratitude to my parents, family and friends for their unfailing encouragement, support and attention.

I also wish to express my gratitude to everyone who, directly or indirectly, lent their hand in this research.

Abstract

The use of cannabis is prevalent among students in Ghana. According to Today News (2014), statistics from the Narcotic Control Board reveal that out of a total number of 50,000 drug users, 35,000 are students from junior, secondary and tertiary institutions. However, there also exist a good number of students who are not users of cannabis. This research sought to identify factors that deter students, who are non-cannabis users, from using the drug and to rank the factors. These objectives were met by handing out questionnaires to 310 students from Ashesi University College, Berekuso, Ghana. The options to the questions asked in the survey were informed by the deterrents found in literature and the Theory of Planned Behaviour; a theory that categorizes the factors that influence an individual's decision to adopt or maintain a particular behaviour. The data collected was organized using the PSPP software and analyzed with Descriptive Statistics, Chi-Square Tests and Factor Analysis. It was found out that most students rated health threats as their most important disincentive to using cannabis. In view of this, an educational campaign on the negative effects of cannabis on mental and physical health using multi-sectorial approach is recommended to reduce if not eliminate the abuse of cannabis among the youth in Ghana.

Keywords: cannabis, deterrents to cannabis use, cannabis abuse among the youth of Ghana, health impact of cannabis, cannabis education in Ghana.

Table of Contents

Declaration	iii
Acknowledgement.....	iv
Abstract.....	v
Table of Contents.....	vi
1.1. Introduction to Study.....	- 1 -
1.2. Problem Statement.....	- 7 -
1.3. Research Question	- 7 -
1.4. Aim of Research	- 7 -
1.5. Specific Objectives.....	- 8 -
1.6. Scope of Study	- 8 -
1.7. Research Method	- 9 -
1.8. Thesis Outline.....	- 9 -
Chapter 2 – Literature Review	- 11 -
2.1. Cannabis in Detail	- 11 -
2.2. Other Uses of Cannabis.....	- 13 -
2.3. Reasons for Cannabis Interventions	- 15 -
2.4. Factors that Encourage Cannabis Use.....	- 18 -
2.5. Deterrents of Cannabis Use	- 20 -
2.6. Theoretical Framework.....	- 23 -
Chapter 3 – Methodology	- 26 -
3.1. Operationalization	- 26 -
3.2. Population of Study.....	- 26 -
3.3. Sampling strategy.....	- 28 -
3.3. Type of Data Collected.....	- 29 -
3.4. Data Collection Tool.....	- 30 -
3.5. Data Analysis Approach.....	- 31 -
Chapter 4 – Data Analysis.....	- 32 -
4.1. Demographic Data of Respondents	- 32 -
4.2. Outcomes of Research Questions.....	- 33 -
4.3. Discussion of Findings.....	- 53 -

4.4. Limitations of the Study	- 61 -
Chapter 5 – Conclusion & Recommendations	- 62 -
5.1. Conclusion.....	- 62 -
5.2. Recommendations	- 64 -
Appendix.....	- 74 -

Chapter 1 – Introduction and Background of Study

1.1. Introduction to Study

The abuse of and addiction to narcotic drugs are social problems in many countries of the world today. It is not so much the ingestion of narcotic drugs as their addiction that makes many governments pay attention to the laws that oversee their cultivation, distribution and use. Addiction to narcotic drugs has many disturbing effects on individuals and the societies in which they live. Some of these include mental and physical illness as well as violent behaviour that facilitates crime and unproductivity at work.

Cannabis is one such narcotic drug that poses the forenamed threats to individuals and societies. According to the Report on Global Illicit Markets 1998-2007 (2009), as at 2007, the drug was produced in over 170 countries ranging from wealthy to developing countries and its market was continually receiving new entrants. Currently, cannabis is considered by the World Health Organization (2015) to be the most widely cultivated, trafficked and abused illicit drug worldwide. In Ghana, mental health facility reports as well as police reports have attested that cannabis is chief among the narcotic drugs that account for a majority of psychiatric cases and drug law offences. The rampant incidence of cannabis law offenses, the negative repercussions to physical and mental wellbeing as well as the flagrant use of the drug by Ghanaian and non-national celebrities on Ghanaian soil, beg for a discussion on improved approaches to eradicate cannabis addiction in the country. Much attention has been paid to sanctioning users in Ghana since the country's adoption of the Single Convention on Narcotic Drugs of 1961. Perhaps now is the time to

turn to non-users; investigating the strongest factors which deter them from the practice in order to promote these.

This chapter develops the backdrop against which the research is conducted. First, it provides a general definition of cannabis, describes how it is used and what its negative effects are. It then launches into a discussion of the means by which the Ghanaian government seeks to eradicate the use of cannabis and looks at general cannabis use in Ghana and then more specifically, the use of the drug by students in universities in the country. Next, the problem is outlined: not all university students use cannabis, however, the factors that keep non-users from using cannabis are not clearly known. The chapter goes on to list the research questions, scope and objectives, and ends with a brief description of subsequent chapters.

1.1.1. Background

Cannabis, known scientifically as *Cannabis sativa*, is defined by the United Nations Office on Drugs and Crime's World Drug Report (2007) as a green plant whose flowers, leaves and stems are smoked like tobacco using a variety of techniques.

The most common preparations of cannabis are *marijuana*, *hashish* and *hash oil*. The National Institute of Drug Abuse (2014) describes marijuana as the dry, shredded green and brown mix of leaves, flowers, stems, and seeds from the *Cannabis sativa plant*. The institute also describes hashish as the more concentrated and resinous form of marijuana and hash oil as a sticky black liquid extracted from the resin.

According to the American College of Physicians (2008), cannabis has been smoked for centuries. Chaudhari (1998) also asserts that the drug has been chewed and smoked almost as long as alcohol and coffee have been served in the Middle East.

The American College of Physicians (2008) maintains that cannabis has the ability to stimulate appetite, correct glaucoma, neurological and movement disorders and to combat pain generally. However, the United Nations Office on Drugs and Crime (2011) takes a look at the long-term use of cannabis and asserts that such a practice can lead to a tolerance and dependence on delta-9-tetrahydrocannabinol (THC), the active ingredient in cannabis, which has mind-altering properties. The report by the body mentions that dependence on cannabis could be so serious that withdrawal from the drug could result in insomnia, appetite disturbance, irritability, anxiety and depression.

The American University of Physicians (2008) also contributes to the discussion of the negative effects of cannabis saying, smoking cannabis frequently may impair short-term memory and attention, induce poor motor skills and reaction time and disorient the organization and interpretation of complex information. It posits that the effects of smoking cannabis frequently on the brain are so severe that users do not show signs of memory improvement even after six weeks of abstinence.

1.1.2. History of Cannabis in Ghana

Cannabis is reported by the Ghanaian Chronicle (2011) to be popularly referred to as marijuana, ganja, “ntaampi”, “abonsam tawa” and “wee” among citizens of the country. The Ministry of Health (2003), in a report on the consequences of substance abuse also

lists “taaba”, “abele”, “jah”, “Indian hemp”, “ahabammono” (new leaf) “panyini”, “gari”, “hardina”, “popoje” and “sundu” as some of the names Ghanaians use to refer to the drug.

War veterans who had fought in Asia during the Second World War introduced cannabis to Ghana, as is asserted by Akyeampong (2005). He mentions that during the period right after independence, some cocoa farmers intercropped their cocoa plantation with cannabis in order to benefit from the sale of the herb in between cocoa harvests. This was especially lucrative in 1958 when the world market prices for cocoa declined. Akyeampong (2005) goes further to suggest that during the colonial period, the use of cannabis was associated with people who engaged in risky and or strenuous activities such as stevedoring, farming, prostitution and burglary.

1.1.3. Drug Policies in Ghana

Benavie (2009) brings to light the perception that cannabis is a gateway drug to more potent drugs such as heroin and cocaine and how acting on that perception, there have been many interventions worldwide to curb or regulate its use. Ghana, as a nation, recognizes the dangers of cannabis use to the wellbeing of its populace and in view of this, has put in place intervening measures such as legislation and education to prevent its use.

According to the International Narcotics Control Strategy Report (2012), the nation is a signatory to the 1988 UN Drug Convention, the 1971 UN Convention on Psychotropic Substances and the 1961 UN Single Convention as amended by the 1972 Protocol. These three conventions effect the criminalization of cannabis cultivation, distribution, use and all public actions that incite others to do same. In other words, Ghana as a party to

the conventions, sanctions cultivators, distributors, users and promoters of cannabis. The country enacted the Narcotic Drugs (Control, Enforcement and Sanctions) Law of Ghana (1990) to spell out the specific sanctions for these crimes. The conventions also necessitate the treatment, education, rehabilitation and social reintegration of cannabis abusers either as an alternative to sanctions or in addition to sanctions. Finally, the conventions call for the establishment of an appropriate agency responsible for co-ordinating other bodies for the effectualization of the forenamed requirements. The Government of Ghana in accordance with the conventions established the Narcotics Control Board (NACOB) in 1990 to tackle increasing drug abuse trends. According to the Ministry of Interior (2007), NACOB seeks to implement the existing local and international laws on cannabis through enforcement and control, education and preventive measures, as well as the treatment and rehabilitation of drug addicts.

1.1.4. Prevalent Use of Cannabis in Ghana

Although the forenamed laws and conventions make cannabis illegal in Ghana, statistics on cannabis use over the years, reveal a high number of users in the country. In 1998, according to the World Drug Report (2007), 21.5% of Ghanaians, within the age range of 15 to 64 used cannabis. In 2005, the country was named by World Drug Report (2007) as one of the highest-ranking countries with regard to the quantity of cannabis confiscated in 2005. More evidence of the prevalent use of cannabis in Ghana can be inferred from the number of patients in psychiatric hospitals in the country. Korley (2014), reports that Dr. Asare, the former Chief Psychiatrist of Ghana's Ministry of Health, asserts that in 2007, out of the 594 drug-related cases admitted to the Accra Psychiatric Hospital, 400 were cannabis-related. According to Jafaru (2014), the hospital also recorded 4,000

cannabis-related outpatient cases in 2013. He also asserts that the psychiatric hospital receives 400 outpatient cases daily, with 30% of the cases being cannabis-related. Reuben (2014), confirms Jafuru's (2014) assertion saying that the current chief psychiatrist of Ghana, Dr. Akwasi Osei, stated that marijuana-related cases account for about 30% of out-patient visits and 10% admissions to the Accra Psychiatric Hospital each year.

1.1.5. Cannabis Use among Students in Ghana

According to Webb, Ashton, Kelly and Kamali (1996), in the United Kingdom, university students appear to have a high likelihood of experimenting with illicit drugs such as cannabis. Studies by these researchers on drug use among students in United Kingdom universities have shown levels of illicit drug use that exceed those of the general population. In Ghana however, there are no documents that explicitly reveal the prevalent use of cannabis in universities. Nevertheless, inferences of this can be made from records of the prevalence of the drug in Ghanaian high schools. Generally, in Ghana, some high school students find themselves experimenting with narcotic drugs. The Ministry of Health / World Health Organization (2003) asserted that the mean age of first use of narcotic substances including cannabis ranged between 14 to 19 years (the age group of most high school students) in Ghana. Subsequently in 2008, Global School-based Student Health Survey (GSHS) using a sample of 7,137 high school students in Ghana estimated that among students who had ever used any drugs, 40.2% used marijuana and hashish (forms of cannabis) most often. Today News (2014) also based on investigations and statistics from the Narcotics Control Board (NACOB) as at 2014, asserted that out of the total number of 50,000 drug users in Ghana, 35,000 were

students from junior/senior high schools and tertiary institutions, aged between 12 and 35 years. Based on the fact that: surveys have revealed the use of cannabis among some high school students over the years, cannabis is an addictive drug and high schools in Ghana feed universities in the country with freshmen each year; it may be deduced that there is a high likelihood of cannabis use among university students in Ghana.

1.2. Problem Statement

Despite the high number of cannabis users as revealed by the World Drug Report (2007) and cases reported to the psychiatric hospital over the years, not all Ghanaian youth and for that matter, students enrolled in universities in Ghana, are cannabis users. However, the exact reasons why this group of people remain non-users of cannabis is unknown.

Being aware of the factors that deter university students from using cannabis is essential. Even more essential is knowing the most prominent factors that keep them away from the drug as this information can inform policy decision regarding which specific deterrents to emphasize in educational programs and policies among university students and indeed, Ghanaian youth, in order to ensure mental and physical wellbeing.

1.3. Research Question

The question that this research effort seeks to address is “What factors inform the decisions of students in universities not to use cannabis?”

1.4. Aim of Research

Through a survey of students of the Ashesi University College, this research aims at identifying and ranking the factors that deter cannabis use. It also aims to make

recommendations to emphasize the most deterrent factors for use in educational programmes among the youth, specifically university students, in the country.

1.5. Specific Objectives

The specific objectives that will help achieve the aim of this research thereby answering the research question are as enumerated below:

1. To identify the deterring factors of using cannabis;
2. To rank the deterring factors of using cannabis among university students in Ghana: specifically Ashesi University College; and
3. To make recommendations aimed at reducing the use of cannabis among youth of Ghana

1.6. Scope of Study

For the purposes of identifying the factors which the government should promote in order to deter cannabis use among youth in the country, this research investigates, through the administration of questionnaires, the factors that deter cannabis use by students of Ashesi University College located in Berekuso in the Eastern Region of Ghana.

The choice of students of the Ashesi University College as the population for the research was influenced by two main factors. To begin with, university students form an influential portion of the youth of the country. In addition, records from the Registry of Ashesi University College indicate that the students enrolled in the university are of a diverse background with regard to ethnicity and socio-economic standing. Currently, out of the total population of 612 students, 16% is non-Ghanaian. In addition, while 49% of the students currently bear the entire cost of tuition and housing, 51% receive financial aid

from the school and the MasterCard Foundation. These factors make Ashesi University College a suitable representative population of the youth of Ghana.

1.7. Research Method

This research sought to identify and rank the factors that prevent the students of the Ashesi University College who do not use cannabis from doing so and is therefore mainly quantitative in nature.

The forenamed objective was met through the administration of questionnaires. The questionnaires handed out gathered information on the respondents' demographics, their awareness of the laws against cannabis in Ghana, how deterrent they view present sanctions against cannabis users as specified by the law and their most important reasons for not using the drug. The data collected was organized using the PSPP, statistical tool and analyzed using the Descriptive statistics, Cross Tabulation, Chi-Square Test and Factor Analysis features of the tool.

1.8. Thesis Outline

Chapter 1: Introduction

This section introduces the topic of study by providing a background on the definition, description and preparation of cannabis, the effects of its use and its presence in Ghana and more specifically in universities. Next, there is a discussion of the problem and an enumeration of the research question, aims and objectives as well as the scope the study covers.

Chapter 2: Literature Review

This section scrutinizes scholarly literature and concepts of relevance to the topic. It sets the tone with an agricultural description of the cannabis plant and gives an explanation of its chemical processes in the body. It also pools together some reasons researchers have propounded for interventions against the drug. Thereafter it explains some factors that encourage individuals to use cannabis and others that act as disincentives to the practice. From this vast collection of propositions, the theoretical framework on which the research is built is explained.

Chapter 3: Methodology

This section outlines, explains and justifies methods adopted. It justifies the population and sample as well as the use of questionnaires as the data collection method. It also explains how the sample size was arrived at and the stratified random sampling strategy employed to select members of the population. Finally, the chapter explains the Chi-Square Test and Factor Analysis methods and gives justifications for both.

Chapter 4: Findings and Discussion

This chapter presents and explains data gathered and makes comparisons with the theoretical framework of the study. It also explains the limitations encountered during the study.

Chapter 5: Conclusion and Recommendation

The final chapter provides recommendations based on the research findings.

Chapter 2 – Literature Review

This chapter provides a detailed discussion of the main concepts surrounding the research topic to establish a good background for the study. It describes what cannabis is and the manner through which its effects are felt in the body. Next, it mentions some positive uses of cannabis and explains why its negative effects are paid greater attention. It then examines some factors that encourage the use of the drug, and factors that do otherwise. It concludes by outlining the theory of planned behaviour; the framework upon which the research questionnaire is structured.

2.1. Cannabis in Detail

2.1.1. Physical Description and Areas of Cultivation

Iversen (2000) states that cannabis is a lush fast-growing annual plant, which can attain maturity in three to five months when grown outdoors and sixty days when grown indoors under optimum temperature and light. The European Monitoring Centre for Drugs and Drug Addiction (2011) asserts that the plant does well in both temperate and tropical regions. It is no wonder that Leggett (2006) notes cannabis as the drug that is cultivated in practically all the world's countries.

2.1.2. Pharmacology of Cannabis

Iversen (2000) mentions that delta-9-tetrahydrocannabinol (THC) is the active ingredient in cannabis responsible for its substantial effect on mental processes. The United Nations Office on Drugs and Crime (2011) identifies the flowering top and leaves as the main parts of the cannabis plant that has THC. The organization also gives the following explanation on the manner in which THC affects the brain. An individual's brain has a communication network, which is known as the endocannabinoid system

and is responsible for the development and functioning of the nervous system. This communication system has cannabinoid receptors (CBRs) located on neurons. The CBRs are common in the brain regions responsible for excitement, reasoning, attentiveness, memory, reward, pain perception and movement and are usually activated by anandamide produced by the body. When cannabis is ingested, THC, instead of anandamide, in combination with the CBRs, activates the neurons. However, unlike the naturally occurring anandamide, THC is more potent and its effects, long lasting. The National Institute on Drug Abuse (2012) in a report on marijuana, further explains that THC overstimulates the neurons producing the euphoric feeling users experience. This overstimulation, the authority goes on to say, changes the function of CBRs and ultimately results in addiction along with withdrawal symptoms should the user abstain from the drug for a period of time.

2.1.3. Modes of Ingestion

According to Iversen (2000) smoking, eating and drinking are the popular ways by which cannabis is ingested. Inferences from newspaper accounts as well as international reports such as the United Nations World Drug Report reveal that smoking is the most common mode of cannabis ingestion in Ghana. According to Kennedy (2014), the Executive Secretary of the Narcotics Control Board also suggests that the drug is mixed in “shito” (a Ghanaian hot sauce) among students.

The United Nations Office on Drugs and Crime (2011), in a review of cannabis, asserts that smoking the drug in a water pipe or joint is the quickest way of getting it to the brain in order to obtain its psychoactive effects. According to the organization, smoking the drug yields a high that lasts from one to three hours. Iversen (2000) offers an

explanation on the manner in which the active ingredient of cannabis is transmitted into the brain during smoking. He states that smoking burns the THC in cannabis, distilling it into a vapor, which condenses into fine droplets for inhalation in smoke. The smoke is quickly permeated through the lungs which are a large enough surface area for absorption and then transmitted to the blood. Here, the THC-filled-blood the lungs now contain is channeled to the heart for pumping to other parts of the body, including the brain. In the brain, the THC has the psychoactive effects previously outlined.

Iverson (2000) observes that consumption of cannabis through eating or drinking, on the other hand, renders a much slower absorption and provides an escape from the disturbing reactions caused by inhaling smoke. True to this finding, the United Nations Office on Drugs and Crime (2011), comparing the potency of smoking cannabis to eating or drinking concludes that smoking the drug introduces more THC into the bloodstream. The European Monitoring Centre for Drugs and Drug Addiction (2015) explains that absorption through eating or drinking is low because THC has poor water solubility. Iverson (2000) also states that THC requires fat in order to be absorbed and so is dependent on fat from previously ingested food. In addition, he mentions that THC is quickly broken down by the liver before it can be circulated in the bloodstream.

2.2. Other Uses of Cannabis

Iversen (2000) makes the claim that cannabis is a multipurpose species that proved beneficial to agriculture for millennia. Citing a number of examples, he mentions that an acre of hemp produces more fiber than an acre of trees and was used for that purpose in Northeastern Asia circa 600 BC. Cannabis fiber was used to make ropes, sails, towels, paper and canvas, Iversen (2000) continues. To illustrate how heavily

cannabis was depended on in the past, he asserts that the word “canvas” is derived from the Dutch pronunciation of cannabis. However, Iversen (2000) is quick to point out that today, most of the past uses of cannabis are catered for by cotton and synthetic fibers.

Presently, researchers such as Borgelt et al. (2013) assert that cannabis is beneficial in the field of medicine. According to them, the drug has been used for medical purposes for many years and is useful for the treatment of pain and muscle spasms, nausea and vomiting associated with cancer chemotherapy and of weight loss in patients with Acquired Immune Deficiency Syndrome (AIDS). The American Academy of Ophthalmology (2014) states that cannabis is effective in the treatment of glaucoma, a side vision impairment caused by optic nerve damage due to high intraocular pressure (IOP). According to the organization, cannabis is helpful in reducing intraocular pressure for short periods. However, the British Medical Journal (2001) argues that medicinal cannabis is no more effective in suppressing pain than codeine. They continue that medicinal cannabis has depressant effects on the central nervous system and disapprove of their extensive introduction into medical treatment. The American Cancer Society (2014) also mentions that medicines made from cannabis such as Dronabinol and Nabilone may result in increased heart rate, decreased blood pressure, light-headedness and fainting as side effects. The society concludes that there is a need for more scientific research on cannabis as medical treatment for cancer patients. They argue that research needs to be conducted to discover “better and more effective therapies that can overcome the often debilitating side effects of cancer and its treatment”.

2.3. Reasons for Cannabis Interventions

As there exist docile substitutes to the forenamed benefits cannabis provides, the efforts of many governments and agencies worldwide reveal that generally greater attention is now paid to the potential health risks of cannabis with the aim of intervening in the increase of its use. Alternatively, as the American Society of Cancer (2014) puts it, “There is still concern that marijuana may cause toxic side effects in some people, and any benefits must be carefully weighed against its potential risks.” According to research discussed in the ensuing paragraphs, cannabis *poses risks to users’ health*, *alters behaviour* and is a *gateway to other dangerous drugs*.

2.3.1. Health Threats

As reported by the Office of Environmental Health Hazard Assessment (2009), cannabis when smoked directly as marijuana could cause cancer. The report asserts that direct marijuana smoking is strongly associated with cancer of the lung, head and neck, bladder, brain, and testis. However, the American Cancer Society (2014) purports that most reviewers hesitate to pin down smoking marijuana to cancer as many people who have cancer and smoke marijuana also smoke tobacco, a drug notorious for its carcinogenicity.

Research has revealed cannabis’ ill effects on reproduction. According to Grush (2014), research by Dr. Alan Pacey of University of Sheffield in England has revealed the ability of cannabis, in the form of marijuana, to negatively affect sperm production in male smokers. She also reports that Dr. Pacey’s study found abnormal sperm production in men who had smoked marijuana three months prior to ejaculation. These findings corroborate the results obtained by scientists at Buffalo University as reported

by BBC News (2003). Observing the sperm behaviour of 22 men who had smoked marijuana on average 14 times a week for at least five years, these scientists found that THC in marijuana overstimulated sperm causing them to swim faster and experience burn-out long before they are able to reach a woman's egg. BBC News (2003), reports that Dr. Burkham, the lead researcher at Buffalo University concludes that although many men who smoke marijuana have been successful at fathering children, smoking marijuana is especially dangerous to men whose fertility is already endangered by other genetic factors. In addition, the American Cancer Society (2014) advocates against using cannabis during pregnancy as women who do so may have stillbirths. The Office of Environmental Health Hazard Assessment (2009), does not dispute the fact that marijuana smokers may bear children, however the organization draws attention to the fact that these children may suffer from childhood cancer. It reports that parental marijuana smoking; the use of marijuana by a child's parents before he or she is conceived or during gestation may result in myeloid leukemia, neuroblastoma, and rhabdomyosarcoma. The American Society of Cancer (2014) also mentions that children of marijuana smokers may experience increasing problems with development. Cannabis is also known to interfere with users' intelligence especially those in their adolescent years. According to Drs. Tiffany Chao and Shari Barnett of ABC News (2012), a study carried out on adolescents in New Zealand revealed that, those who began smoking marijuana regularly before the age of 18 showed an eight-point drop in IQ between the ages of 13 and 38. Quoting Dr. Richard Wahl, director of adolescent Medicine, University of Arizona, ABC News explains that before age 25, the frontal lobe

myelination is not fully completed and is susceptible to damage from neurotoxins contained in cannabis.

2.3.2. Behavioural Changes

The Health Committee of New Zealand (2003) posits that cannabis use does not result in behavioural deterioration however; cannabis users may put up deviant behaviours simply as result of their predisposition to such actions. Contrary to this proposition, the Western Sydney Drug and Alcohol Resource Centre (2012) argues that sometimes using cannabis causes fear, anxiety, panic attacks and paranoia which result in aggressive flare-ups.

Other researchers such as Hubbard, Franco and Onaivi (1999) are certain that cannabis is associated with the amotivational syndrome that is characterized by a significant decline in personal drive and ambition, lethargy, shortened attention span and a general impairment of judgment and memory of chronic users.

2.3.3. Cannabis – The Gateway Drug

Another reason for attempts to intervene in the widespread use of cannabis is the belief that it is a gateway drug. According to Hall and Lynskey (2005), a gateway drug is a drug whose use is a cause of the use of later drugs. Surveys have been conducted to find out the exact relationship between cannabis and other illicit drugs. Hall and Lynskey (2005), in their research identify three possible explanations for the relationship between cannabis use and the use of other drugs. The first, they say, is that cannabis and other drugs do not have a causal relationship; however, it is only because of their common market that these other drugs are made available to a user who already has access to cannabis. The second is that cannabis has a pharmacological effect on the

brain making users more open to trying other drugs. The last explanation offered is that the peculiar characteristics of cannabis users that make them open to using cannabis in the first place, are the same peculiarities that make individuals susceptible to using other potent drugs.

Whatever the relationship may be between cannabis and other potent drugs, studies by the Health Select Committee of New Zealand (2003) have found that users of cannabis have the tendency to report a record of high usage of more potent drugs. The research of the latter found that individuals who had ingested cannabis at least 50 times in a year were 60 times more susceptible to trying other prohibited drugs than individuals who had never used cannabis. The committee therefore concluded that when cannabis is used often it might serve as a gateway drug to other illicit drugs through either its pharmacological effects or the exposure to the illicit drug market.

2.4. Factors that Encourage Cannabis Use

According to Verweij et al. (2010), “because cannabis use is associated with social, physical and psychological problems, it is important to know what causes some individuals to initiate cannabis use and a subset of those to become problematic users”. The factors discussed in the ensuing paragraphs have been identified as motivations to cannabis use.

2.4.1. Personal Propensities to use Cannabis

Ausubel (1980) draws attention to individuals who are more liable to drug addiction than others due to personal traits they possess or experiences they have had. Some of these include irresponsibility, feelings of depression and a myopic outlook towards life. These behavioral traits may be induced by broken homes, anxiety and past failures.

Such individuals turn to drugs because of their psychotropic effects of euphoria and ego surges.

Self-identity could also make an individual susceptible to use cannabis. Conner and McMillan (1999) define self-identity as “the salient part of an actor’s self which relates to a particular behaviour”. They go on to say that, cannabis users may use the drug because being a cannabis user is an important part of their self-identity. Charng *et al.* (1988) however insist that the contribution of self-identity to susceptibility to certain actions depends on the extent to which the behaviour is repeated. Relating this position to cannabis use, Charng et al (1988) seem to purport that self-identity cannot truly be said to motivate an individual to use cannabis because it is the repetitive use of cannabis in the first place which causes the individual to identify using cannabis as a salient aspect of his or her identity.

2.4.2. Environmental Factors

Ausubel (1980) points out an individual’s environment as important in shaping an addiction to narcotic drugs. He notes different attitudinal tolerance levels for drugs in different environments and attributes variances in incidents rates between working class and middle-class groups, between nationalities, as well as health professionals and professionals from other fields. In addition, a study conducted by Dinges and Oetting (1993), showed that respondents who had used specific drugs in the last 30 days almost invariably had friends who used the same drugs and were less likely to have friends who used other, or no, drugs. Shilts (1991) also confirms this trend and maintains that drug users have more drug-using friends than non-users.

2.5. Deterrents of Cannabis Use

2.5.1. Social Perception

Bottorff et al (2013) are certain that cannabis use has social stigma and continues to be held as deviant behaviour in many contexts including the use of the drug by patients for therapeutic purposes. These researchers fall on Goffman's (1963) definition of stigma: the phenomenon whereby an individual with an attribute, which is deeply, discredited by his/her society is rejected as a result of the attribute.

2.5.2. Religion and Spirituality

Religiosity and spirituality have received notable consideration in the discussion of factors that prevent individuals from using cannabis. Miller (1998) and Lesser (2000) give good explanations of the two concepts. According to Miller (1998), religiosity involves religious affiliation, participation, and association. Lesser (2000) explains spirituality as an individual's relationship to, connection with, and feelings about God or some higher power, and how this connection is related to his or her search for self and meaning. Miller (1998) further comments that since the aim of most religions is to induce spirituality in members, the two concepts often overlap. Studies by researchers such as Miller (1998), Chitwood et al. (2008) and Felt, McBride, and Helm, 2008 have provided evidence that religion and spirituality may prevent an individual from using narcotics such as cannabis. According to Miller (1998), for instance, "religiously involved individuals are consistently less likely to use alcohol and other drugs, and when they do so are less likely to engage in heavy use and suffer its adverse consequences". Wallace, Myers and Osai (2004) based on research findings, also claim, "youth who attend religious services weekly are less likely to use marijuana than

those who never attend, and youth for whom religion is very important are less likely to use marijuana". Gomes et al. (2013) likewise found religiosity to be an influential protective factor against drug use among university students in Brazil. The researchers however were unable to identify the manner in which religiosity acted to deter students from using narcotics. Ganu (2013), in a study on substance abuse among members of the Seventh Day Adventist Church in Ghana, also reports that 80% of a sample of 554 respondents had never used narcotics, citing their commitment to God as the main reason for this. Ganu (2013), offering an explanation for the general negative relationship between drug use and religion, points out that narcotics are strictly forbidden by most religious bodies including Islam and many denominations of Christianity. Jang et al. (2008) also purport that the main reason for these findings of inverse relationships between religion and narcotic use is that religions promote prosocial behaviour and encourage individuals to lead normative lives. However, Miller et al (2008) are insistent that spirituality or religion does not necessarily ensure abstinence from cannabis.

2.5.3. Legal Consequences

Yablon (2011) implies that drug control laws can be divided into two broad categories: prohibition and liberalization with liberalization further divided into decriminalization and legalization. Goode (2005) compares the situation to a spectrum that has control (prohibition) at one end and decontrol (liberalization) at the other end. In between these two are laws that make different degrees of modifications to the extreme positions.

2.5.4. Ghana's Cannabis Law

The current laws and sanctions governing cannabis in Ghana are encapsulated in the Narcotic Drugs (Control, Enforcement and Sanctions) Law, 1990 (PNDCL 236). According to this law, the increasing incidence of general narcotic drug abuse in Ghana as at 1992 as well as the aggressive measures put in place to curb unlawful narcotic dealing internationally, necessitated its enactment. In its preamble to various sanctions for narcotic offenses, the law expresses the hope to prevent the cultivation, distribution and use of narcotic drugs by providing deterring punishments. Based on this objective of deterrence, Ghana's law on cannabis can be said to be primarily established on the prohibitionist model of drug policies.

McBride et al (2001) mention that the prohibitionist model advocates harsh punishments for illegal drug possession, distribution or production. Goode (2005) elaborates on the implications of this model: an individual engaged in a drug transaction, or who is in possession of a quantity of an illegal substance and is apprehended by the police, may be arrested, prosecuted, convicted, and imprisoned. In Ghana, the Narcotic Drugs (Control, Enforcement and Sanctions) Law, 1990 (PNDCL 236) prescribes a sentence of not less than 10 years each for the cultivation, possession, distribution or importation of cannabis. The use of cannabis (i.e. smoking, sniffing, consuming or injecting into the body) attracts a sentence of not less than 5 years under the provisions of the law. Again, the law sentences an accused person with two previous convictions, to life imprisonment for a specified cannabis offense. According to the theories of deterrence developed by Thomas Hobbes (1588–1678), Cesare Beccaria (1738–1794), and Jeremy Bentham (1748–1832), an individual who is thinking of committing a crime

would first undertake a cost-benefit analysis and would only forge ahead with the crime if its potential benefits significantly offset the expected costs (sanctions). Again, the bodies of deterrent theorists posit that, a rational individual takes the severity, certainty and celerity of sanctions into consideration in his or her cost-benefit analysis. These factors, they maintain, generally have an inverse relationship with the commitment of crime.

2.6. Theoretical Framework

The literature review identifies religion, social perception and legal consequences as the popular factors that deter individuals from using narcotics such as cannabis. In addition to these, the negative effects of cannabis such as health threats, behavioural changes and increased likelihood of transitioning to the use of more potent narcotics could also serve as disincentives to an individuals' usage. Falling on the Theory of Planned Behaviour expounded by Ajzen (1991), the dynamics of these factors may be explained and categorized. The Theory of Planned Behaviour is a theory of the influences that determine an individual's decision to embrace or uphold a particular behaviour. Ajzen (1991) posits in the theory that the immediate determinants of a person's behaviour are *attitudes toward the behavior, subjective norms, and perceived behavioral control*.

Attitudes toward the behaviour, he says, describe the extent to which an individual has a favourable or unfavourable impression of the behaviour in question. Subjective norms are similar to attitudes toward the behaviour except that they consider society's impression of the behaviour and form a perception of the social pressure to perform or not perform that behaviour. Finally, perceived behavioural control studies the perceived ease or difficulty of performing the behavior by considering impediments and obstacles.

Contextualizing this theory to the present study, the behaviour in question is the non-performance behaviour of refraining from using cannabis. The theory therefore explains and categorizes the factors that influence an individual's decision not to use cannabis and to maintain behaviour consistent with abstaining from cannabis.

The negative effects of cannabis that deter its use may be classified under *attitudes towards the behaviour*. An individual who does not use cannabis may portray and maintain that behaviour because he or she views the negative effects of using cannabis as unfavourable. Such negative effects include health threats, addiction and behavioural changes. As suggested by its name, social perception is a *subjective norm*. The views of the community are influential to a decision not to use cannabis depending on how pressured the individual feels to conform to society's expectations. In one breath, religion may also be classified under *subjective norm* and in another, under *perceived behaviour control*. To the individual who feels pressured by the expectations of his or her religious body along with all its members, religion is a *subjective norm*.

However, to the individual who is committed to obeying the tenets of a religion that forbids the use of narcotics, religion is perceived as a personal impediment to drug use and is therefore classified as a *perceived behaviour control*. Likewise, legal consequences are perceived behaviour controls. They serve as personal impediments to drug use since their deterrent effects are subjective to the individual's perception of severity. Figure 2.1 illustrates the theory of planned behaviour in the light of the deterring factors of cannabis use revealed in the literature review.

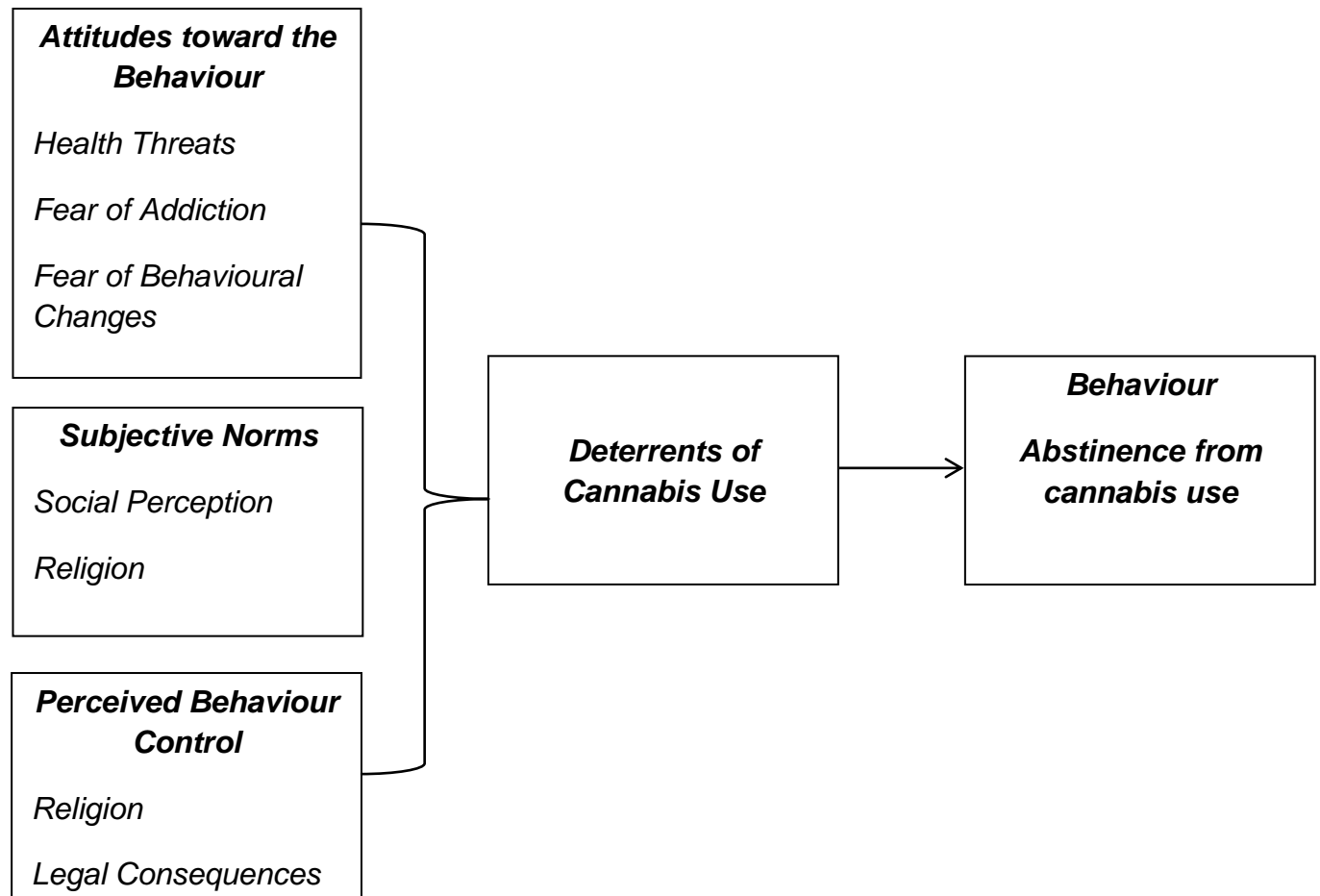


Figure 2.1: Theory of Planned Behaviour in Relation to the Deterrents of Cannabis

Source: Adapted from Ajzen (1991)

Therefore, to find out the most important deterrents of cannabis among university students, the research employed the adapted form of the Theory of Planned Behaviour. Based on this theory, the questionnaires administered in the study made provision for each of the three determinants of behaviour through close-ended questions. During data analysis, a Factor Analysis was conducted to find out if the same categorization of the deterrents was rendered by respondents' feedback.

Chapter 3 – Methodology

This chapter discusses the methods employed in data collection and analysis of the research. More specifically, it gives an operational definition for “using cannabis” and “the deterrents of cannabis use”. It also elaborates and justifies the selection of Ashesi University College as the population, the employment of questionnaires as a data collection instrument and PSPP as the programme for analyzing gathered data using Factor Analysis, Chi-Square Test, Cross Tabulations and Descriptive Statistics.

3.1. Operationalization

The literature review revealed the common means through which individuals introduce cannabis into their bodies as well as the modes of ingestion that assure the quickest introduction of THC into the body. Borgelt et al. (2013) and Argrawal and Lynskey (2009) assert that smoking is the most common method through which cannabis is ingested. In addition, through a review of Ghanaian newspaper reports on cannabis, it was discovered that, although the drug is sometimes administered orally, smoking is the most common method by which it is ingested in Ghana. In view of these, for the purpose of this research, *using cannabis* refers mainly to, but is not restricted to, smoking the drug.

This research also defines the *deterrents of cannabis use* as all factors that prevent, restrict, restrain, demotivate individuals from using cannabis or serve as disincentives hence influence an individual’s decision to abstain from the drug.

3.2. Population of Study

The population of study is students of Ashesi University College. This population was selected mainly for its representativeness and the fact that university students form an

influential component of the youth of Ghana. To begin with, one of the ultimate objectives of this research is to gather data on the most important factors that deter cannabis use among students in order that recommendations aimed at reducing the use of the drug among youth in the country are made. The African Youth Charter (2006) defines youth as individuals within the age range of 15 and 35 years. Under the current Ghanaian educational system, an individual who begins school at age 6 will be 18 when he or she enters the university. Given the four-year university curriculum, the age range of university students (undergraduates) should be 17- 22, all other things being equal. University students therefore fall within the age range of “youth”; a category that surveys have revealed, is susceptible to using cannabis.

There are downsides to using a university as a population for research that seeks to project findings to the youth of Ghana in general. Students in a university may share commonalities in their mentality due to their educational exposure and the activities they pursue during leisure. These commonalities among university students may influence their outlook towards cannabis use and render their reasoning very different from other categories of youth. However, as opposed to other places such as churches, market places and other public areas where varying youth may be found, a university is the most practical place, for the purposes of this research, to find youth in a single location at a specific time, in order to facilitate effective data collection and aid good organization of the research in general. Apart from assuring easy and timely organization of the target age range, a university also offers credibility of the respondents' ages since students have their date of births registered in the institution's database.

More specifically, Ashesi University College was selected because it has a diverse population in terms of ethnicity and socio-economic standing. As at 2015, out of the total population of 612 students, 16% is non-Ghanaian from countries such as Kenya, Nigeria, Zambia, Lesotho, Sweden, Sierra Leone, Swaziland and China. The varying socio-economic backgrounds of the students is reflected in the various cost funding programmes adopted by the students: 49% of the students currently bear the entire cost of tuition and housing, 28% receive financial aid from the school and 23% are on full scholarship from the MasterCard Foundation.

3.3. Sampling strategy

3.3.1. Sample size

According to the World Health Organization (WHO) (1980), for student-drug use questionnaires, populations greater than 5000 require a minimum sample size of 20% of the population. Ashesi University College has a population of 612 students therefore in line with WHO's recommendation, the ideal sample size for a study of the university is a minimum of 120 (20% of 612). However, to ensure a higher representation of the population, this study employs a sample size of 310, which accounts for 51% of the student body which is more than the 20% stipulated by the WHO for similar studies.

3.3.2. Sampling method

The 310 students were obtained through a stratified random sampling method. According to Ahmed (2009), stratified sampling involves partitioning the population into strata and performing sampling separately within each stratum. For this study, Ashesi University College was partitioned into the four-year groups present. The 310 questionnaires were administered to males and females in each year group in

proportion to their population. This was to ensure that the sample of 310 respondents was spread across the entire university and ultimately ensure the representativeness of the findings. Within each year group, the specific respondents were selected through a random generation using the Excel random sampling feature. Table 3.1 shows the distribution of sample.

Table 3.1: Distribution of Sample Population by Year Group and Gender

Population by Strata (Year Group)	Gender	Sample Size	Percentage of Population
Freshmen	Male	47	15
	Female	37	12
Sophomores	Male	39	13
	Female	41	13
Juniors	Male	42	14
	Female	37	12
Seniors	Male	34	11
	Female	33	11
Total		310	100

Source: Field Data

3.3. Type of Data Collected

This research relied on primary data and was quantitative in nature. According to Bryman (2004), quantitative research is a research strategy that emphasizes quantification in the collection and analysis of data. He contrasts this with qualitative research which is a strategy that usually emphasizes words rather than quantification in the collection and analysis of data. Since the study sought to find out the factors that deter students from using cannabis the most, the study was focused on the number of students who asserted a particular reason for not using the drug.

3.4. Data Collection Tool

Self-administered questionnaires were employed to collect information from the sample. Wolf (2008) defines a self-administered questionnaire as “a questionnaire that has been designed specifically to be completed by a respondent without intervention of the researchers collecting the data”. In their comments on the advantages of self-administered instruments, Smart et al (1980) mention that these instruments are usually used for studies of students since they can be conveniently assembled for administration. The researchers also mention that employing self-administered instruments is the best way to collect information about private behaviour considering it affords respondents anonymity.

For this research, it was anticipated that some students might find it difficult to admit certain answers to the questions openly in an interview. Confidentiality of respondents was guaranteed as they did not need to disclose their identities. The data was collected during the Mid-Semester Break of the university. The questionnaires were physically handed out to students who were on campus and emailed, using Google Forms, to students who were not on the premises. The questionnaire (See Appendix) mainly employed close-ended questions and made provision for respondents to give answers that were not included in the options for each question under the “*Other*” category. Close-ended questions are ideal for quantitative research such as this because, during data analyses responses are more easily coded than they are using open-ended questions. The options to the questions were informed by the literature review and theoretical framework. For instance, these aspects of the research classified the deterrents of using cannabis into the following: *attitudes toward the behavior*: the

negative effects of cannabis, *subjective norms*: social perception and religion and *perceived behavioral control*: religion and legal consequences. Possible reasons for not using cannabis were therefore carved around these factors and attached as optional answers to the questions. The questionnaire also gathered information on the following demographic metrics of respondents: gender, age group, religion and year group. This was in order to assess the relationship between gender and religion and the factors that deter the respondents from using cannabis. Again, the questionnaire inquired students' knowledge about laws on cannabis in Ghana, and their main reason for not using the drug (i.e. if they had never used it).

3.5. Data Analysis Approach

The data collected was organized using the PSPP, statistical tool. Thereafter, the data was analyzed using the Descriptive Statistics, Cross Tabulation, Chi-Square Test and Factor Analysis features of the tool. While the Descriptive Statistics, Cross Tabulations and Chi-Square looked at the participants' responses in light of their demographic information (gender and religion) in order to establish relationships of association, the Factor Analysis categorized the respondents' feedback into themes.

Chapter 4 – Data Analysis

The survey was conducted with the aim of identifying the factors that inform the decisions of students not to use cannabis and ranking these factors. Apart from demographic information, other data that was collected bordered on the students' awareness of Ghana's law on cannabis, their reaction to a hypothetical change in the law and their personal perception of the deterrence sanctions on cannabis law offences affords.

4.1. Demographic Data of Respondents

Out of 310 respondents, 267 submitted fully completed questionnaires rendering a response rate of 86%. As a result, only the 267 fully completed questionnaires were analyzed. The subsequent use of *total population* therefore refers to the 267 responses.

The respondents were in the following proportions: 49% males and 51% female. Freshmen students represented 25.47%; Sophomores, 26.97%; Juniors, 25.84% and Seniors, 21.72%. The most popular religions the respondent's had affiliation to were Christianity and Islam while African Traditional Religion (ATR) was in the minority. 2 out of the 4 respondents who selected the "Other" category said they belonged to no religion, 1 said the question was not applicable and another said she belonged to both the Christianity and Islam. Figure 4.1 gives details on the students' gender, age, year of study and religion.

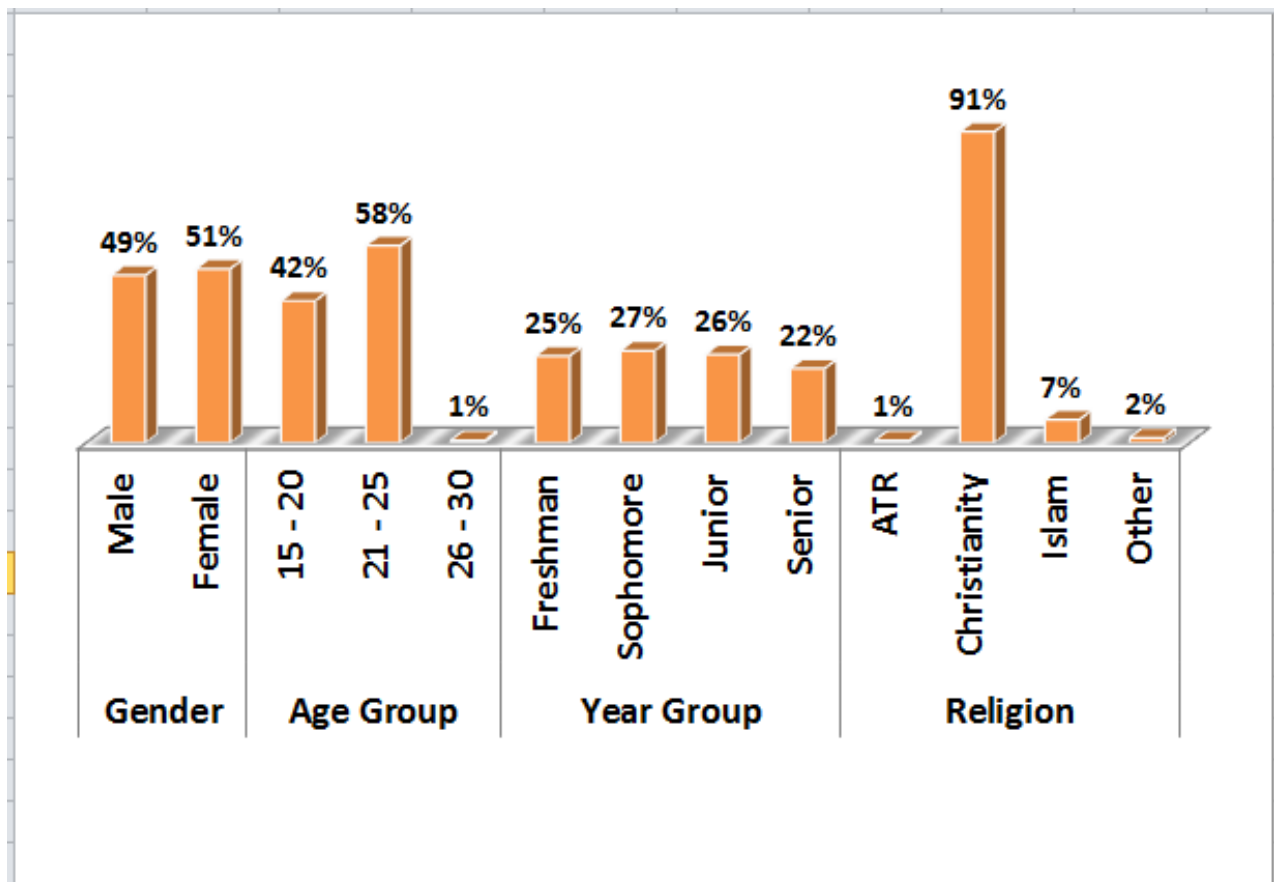


Figure 4.1: Demographic Information in Percentages of the Total Population

Source: Field data

4.2. Outcomes of Research Questions

4.2.1. Deterrents of Cannabis Use – “What is your reason for not using cannabis?”

Respondents were asked to select from a list of six reasons obtained from the literature review, the factors that stop them, personally, from using cannabis. Below are the results for each of the reasons.

- ***Health Threats – “Cannabis is dangerous to mental health and wellbeing”***

While 64.79% were certain that this factor deters them from the drug, 35.21% of the population asserted that health threats are not among the factors that prevent them from using cannabis. Of the total number of respondents who claimed health threats deter them from using cannabis, 45.66% were male and 54.34% were female. On the other hand, 55.32% of the total number of respondents who claimed health threats do not deter them from using the drug were male and 44.68% female. Table 4.1 illustrates the distribution of responses between the two genders.

Table 4.1: Health Threats as a Deterrent according to Gender

Gender	No	Yes	Total
Male	52	79	131
	55.32%	45.66%	49.06%
Female	42	94	136
	44.68%	54.34%	50.94%
Total	94	173	267
	35.21%	64.79%	100.00%

Source: Field data

- ***Religion – “My religion forbids the use of narcotics”***

38.95% of the total population was certain that the tenets of their religion deter them from cannabis use. 61.05% of the same population however asserted that religion was not among the factors that prevents them from using cannabis.

The portion of the population whose religion serves as a personal hindrance to using cannabis was composed of 38.68% of the total number of Christians and 55.56% of the total number of Muslims. On the other hand, 61.32% of the total number of Christians

and 44.44% of the total number of Muslims claimed their religion does not discourage them from using cannabis. All the respondents who selected the “Other” option under religion asserted that religion is not a deterrent to using the drug. Table 4.2 shows the responses in light of the respondents’ religious affiliation.

Table 4.2: Religion as a Deterrent According to Religious Affiliation

Religion	No	Yes	Total
African Traditional Religion	2	0	2
	100.00%	0.00%	100.00%
Christianity	149	94	243
	61.32%	38.68%	100.00%
Islam	8	10	18
	44.44%	55.56%	100.00%
Other	4	0	4
	100%	0.00%	100%
Total	163	104	267
	60.46%	39.54%	100.00%

Source: Field Data

Of the respondents who asserted religion as a deterrent to their use of cannabis, 37% were male and 64%, female. The portion that responded otherwise was composed of 57% male and 43% female. Table 4.3 shows the responses in light of the respondents’ gender.

Table 4.3: Religion as a Deterrent According to Gender

Gender	No	Yes	Total
Male	93	38	131
	57.06%	36.54%	49.06%
Female	70	66	136
	42.94%	63.46%	50.94%
Total	163	104	267
	61.05%	38.95%	100.00%

Source: Field Data

- ***Fear of Addiction “I do not want to get addicted to cannabis”***

The possibility of becoming dependent on cannabis is among the reasons that hinder 36% of the population from the drug. Of this percentage, 48.45% were males and 51.55%, females. 64% of the population said they are undeterred by the fear of getting addicted to cannabis. This percentage was made up of 49.41% males and 50.59% females. This is detailed in Table 4.4

Table 4.4: Fear of Addiction as a Deterrent According to Gender

Gender	No	Yes	Total
Male	84	47	131
	49.41%	48.45%	49.06%
Female	86	50	136
	50.59%	51.55%	50.94%
Total	170	97	267
	63.67%	36.33%	100.00%

Source: Field Data

- ***Behavioural Changes – “I do not know what kind of behaviour I’ll exhibit when I use cannabis.”***

Of the total population, 25.47% asserted that the uncertainty of the manner in which cannabis would affect their behaviour prevents them from using cannabis while 74.53% claimed that this uncertainty is not one of the factors that deters them from using the drug. 38.24% of the respondents whom this factor deters were males while 61.76% were females. For those who are not deterred by this factor, 52.76% were males and 47.24%, females. This is detailed in Table 4.5.

Table 4.5: Fear of Behavioural Changes as a Deterrent According to Gender

Gender	No	Yes	Total
Male	105	26	131
	52.76%	38.24%	49.06%
Female	94	42	136
	47.24%	61.76%	50.94%
Total	199	68	267
	74.53%	25.47%	100.00%

Source: Field Data

- ***Legal Consequences – “The laws of Ghana make cannabis use illegal”***

For 23.97% of the population, legal consequences are among the reasons why they do not use cannabis. 76.03% on the other hand claimed the law does not deter them. 40.63% of the respondents who are deterred by legal consequences were male and 59.38%, female. Those who are not deterred by this factor were 51.72% male and 48.28% female. Details of the responses to the question relative to gender are provided in Table 4.6.

Table 4.6: Legal Consequences as a Deterrent According to Gender

Gender	No	Yes	Total
Male	105	26	131
	51.72%	40.63%	49.06%
Female	98	38	136
	48.28%	59.38%	50.94%
Total	203	64	267
	76.03%	23.97%	100.00%

Source: Field Data

- ***Social Perception – “Society sees cannabis users as misfits”***

29.21% of the population asserted that social perception is among the factors that prevent them from using cannabis while 70.79% were certain that it does not. 47.44% of those who asserted society’s perception as a deterrent to their use of cannabis were males while 52.56% were females. 49.74% of those who are undeterred by this factor were males and 50.26%, females. Table 4:7 shows the distribution of the responses according to gender.

Table 4.7: Social Perception as a Deterrent According to Gender

Gender	No	Yes	Total
Male	94	37	131
	49.74%	47.44%	49.06%
Female	95	41	136
	50.26%	52.56%	50.94%
Total	189	78	267
	70.79%	29.21%	100.00%

Source: Field Data

Other Deterrents

46 respondents, making up 17.23% of the population, provided other reasons for not using cannabis apart from those outlined. Of this number, 35% could identify with some of the deterrents outlined in the close-ended question while 65% could not and so only offered their own explanations. 3 of the responses were however not clear and are not reported. Of the valid 43 responses, some comments revealed that 11% of the respondents had never given the drug a thought and were therefore unconscious of their reason for not using it. Figure 4.2 shows the categories of the answers the respondents provided and the percentages of their frequency.

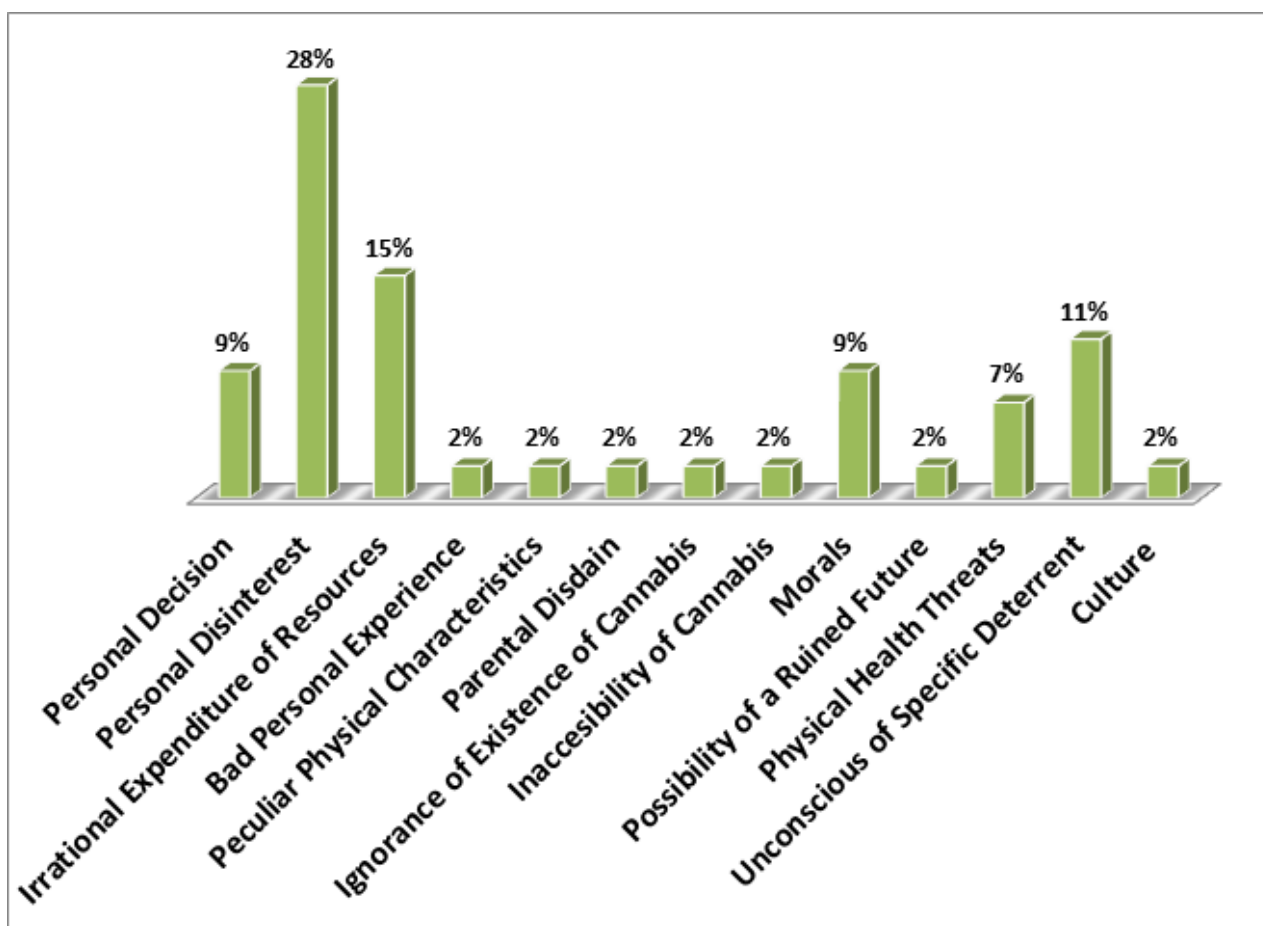


Figure 4.2: Percentage of Responses in the "Other" Deterrents Category

Source: Field Data

The respondents who claimed they do not use cannabis due to personal disinterest summed their feelings towards the drug in phrases such as *"I'm just not interested"*, *"I just do not like it"*, *"I have never tried"*, and *"I have never felt the urge to do so"*. Those who said they are not attracted to cannabis because it is an irrational waste of resources explained this with regard to the time spent smoking and the money spent on purchasing the drug. Those who asserted personal values as influential in their

decision not to use cannabis expressed this along the lines of phrases such as “*I have made a choice to avoid anything that may affect my system negatively*”.

4.2.2. Most Important Deterrents of Cannabis Use

Respondents were also asked to rank the deterrent, attributing the number 1 to the reason(s) they perceived *least important* and 6, to the reason(s) they held as *most important*. Although some students assigned one number to a specific reason, others assigned the same number to two or more different reasons, signifying equal levels of importance to their abstinence from cannabis. Figure 4.3 shows the percentage of the population that ranked each factor their most important and least important deterrent.

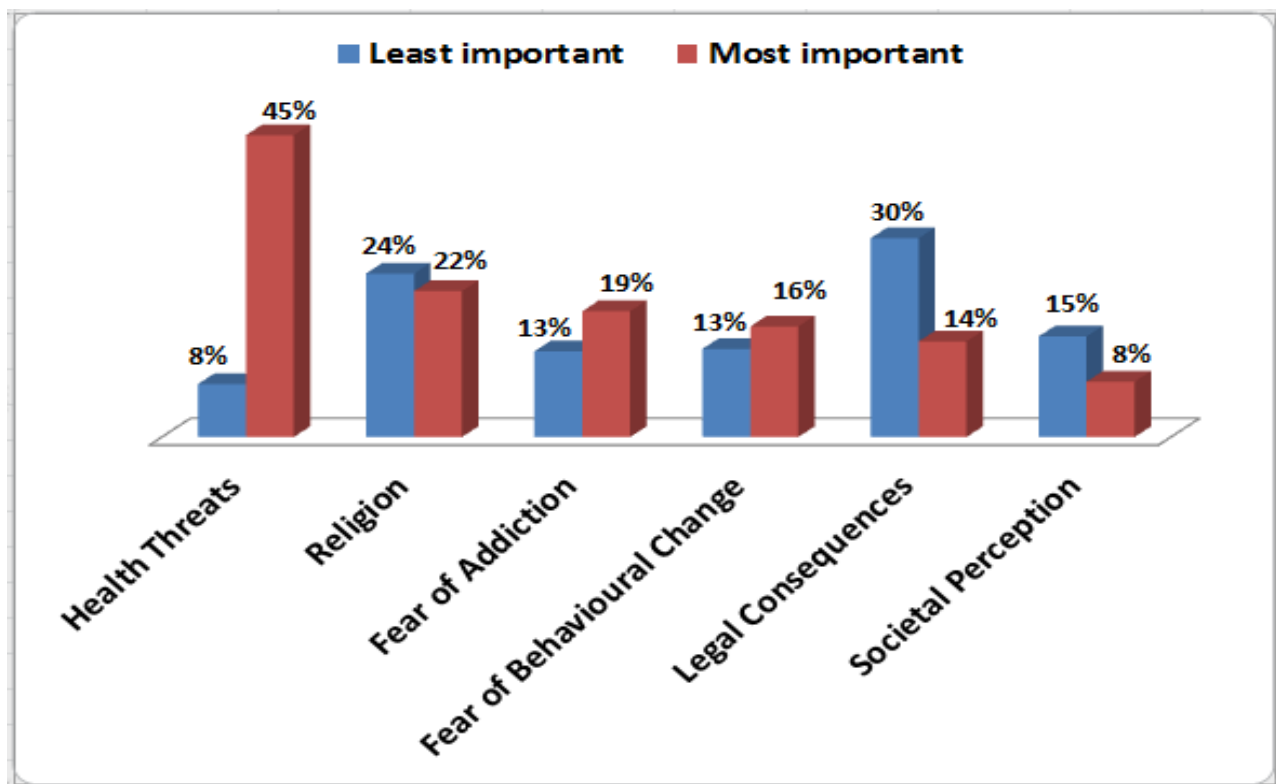


Figure 4.3: Degree of Deterrence

Source: Field Data

- ***Health Threats – Cannabis is dangerous to mental health and wellbeing***

7.87% of the population ranked health threats as their least important reason for not using cannabis. This 7.87% translates to 21 students of whom 52.38% were males and 47.62%, females.

On the other hand, 44.94% of the population said it is their most important deterrent. This 44.94% translates to 120 students of whom 50% were males and 50%, females.

While 8.40% of the males asserted that health threats are their least important reason for not using cannabis, 45.80% said it is their most important reason. 7.35% of the females said the factor is their least important deterrent while 44.12% said it is their most important deterrent. Table 4.8 shows the responses to the various ranks of the deterrence of health threats as a percentage of gender.

Table 4.8: Degree of Deterrence of Health Threats According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	11	14	10	17	19	60	131
	8.40%	10.69%	7.63%	12.98%	14.50%	45.80%	100.00%
Female	10	10	10	17	29	60	136
	7.35%	7.35%	7.35%	12.50%	21.32%	44.12%	100.00%
Total	21	24	20	34	48	120	267
	7.87%	8.99%	7.49%	12.73%	17.98%	44.94%	100.00%

Source: Field Data

- ***Religion – “My religion forbids the use of narcotics”***

24.34% of the population said their religion is their least important reason for not using cannabis. Of this fraction, 55.38% were male and 44.62%, female. In addition, 3.17% were African Traditional Religion affiliates, 90.48% Christian and 6.35% Muslim.

27.48% of the total number of males claimed the factor is their least important reason, so did. 21.32% of females. The entire population of African Traditional Religion was certain that religion is their least important deterrent against cannabis use. On the other hand, 23.46% of the Christians and 22.22% of Muslims asserted that the factor is their least important deterrent.

21.72% of the entire population maintained that religion is their most important deterrent. The 21.72% translates to 58 students of whom 36.21% and 63.79% were males and females respectively. In addition, of this number, 89.66% were Christians while 10.34% were Muslims.

16.03% of the total number of males and 27.21% of females claimed the factor is their most important reason. No member of the African Traditional Religion attested to religion being the most important deterrent. However, 21.40% and 33.33% of the Christians and Muslims respectively said this factor was their most important deterrent.

Table 4.9 and Table 4.10 show the responses to the various ranks of deterrence as a percentage of gender and religious affiliation.

Table 4.9: Degree of Deterrence of Religion According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	36	20	12	19	23	21	131
	27.48%	15.27%	9.16%	14.50%	17.56%	16.03%	100.00%
Female	29	19	22	15	14	37	136
	21.32%	13.97%	16.18%	11.03%	10.29%	27.21%	100.00%
Total	65	39	34	34	37	58	267
	24.34%	14.61%	12.73%	12.73%	13.86%	21.72%	100.00%

Source: Field Data

Table 4.10: Degree of Deterrence of the Fear of Addiction to Cannabis According to Religious Affiliation

Religion	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
African Traditional Religion	2	0	0	0	0	0	2
	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Christianity	57	37	33	32	32	52	243
	23.46%	15.23%	13.58%	13.17%	13.17%	21.40%	100.00%
Islam	4	0	1	2	5	6	18
	22.22%	0.00%	5.56%	11.11%	27.78%	33.33%	100.00%
Total	63	37	34	34	37	58	263
	23.95%	14.07%	12.93%	12.93%	14.07%	22.05%	100.00%

Source: Field Data

- ***Fear of Addiction “I do not want to get addicted to cannabis”***

12.73% of the population, translating to 34 students claimed that the fear of getting addicted to cannabis is their least important deterrent against the drug. This number

was composed of 58.82% males and 41.18% females. 18.73% i.e. 50 students, made up of 52% males and 48% females, on the other hand, said it is their most important deterrent.

Out of the total number of males, 15.27% said the fear of addiction is the least important factor that keeps them away from cannabis while 19.85% asserted its prime importance in their decision not to use the drug. 10.29% of the females were certain that the fear of addiction does little to deter them from cannabis. However, 17.65% expressed a contrary view.

Table 4.11 shows more details on the responses rating the fear of addiction as a percentage of gender.

Table 4.11: Degree of Deterrence of the Fear of Addiction to Cannabis According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	20	15	17	28	25	26	131
	15.27%	11.45%	12.98%	21.37%	19.08%	19.85%	100.00%
Female	14	19	24	27	28	24	136
	10.29%	13.97%	17.65%	19.85%	20.59%	17.65%	100.00%
Total	34	34	41	55	53	50	267
	12.73%	12.73%	15.36%	20.60%	19.85%	18.73%	100.00%

Source: Field Data

- ***Behavioural Changes - “I do not know what kind of behaviour I will exhibit when I use cannabis”***

35 students making up 13.11% percent of the population said they are least deterred by the uncertainty of the behaviour they may exhibit when they use cannabis. 57.14% of these students were males while 42.86% were females. 15.27% of the total number of males pointed to behavioural changes as their least important deterrent while 11.03% of the total number of females asserted the same belief.

44 students who made up 16.48% of the population find this factor their most important deterrent against using cannabis. Of this number, 47.73% were males while 52.27% were female. 16.03% of the total number of males and 16.91% of the total number of females agreed that this factor is their most important deterrent. Table 4.12 gives details on the various ranks in relation to the gender distribution of the population.

Table 4.12: Degree of Deterrence of the Fear of Behavioural Changes According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	20	21	25	25	19	21	131
	15.27%	16.03%	19.08%	19.08%	14.50%	16.03%	100.00%
Female	15	29	25	18	26	23	136
	11.03%	21.32%	18.38%	13.24%	19.12%	16.91%	100.00%
Total	35	50	50	43	45	44	267
	13.11%	18.73%	18.73%	16.10%	16.85%	16.48%	100.00%

Source: Field Data

- ***Legal Consequences – “The laws of Ghana make cannabis use illegal”***

With regard to ranking legal consequences as an important deterrent, 29.59% of the population said it is their least important reason for not using cannabis while 14.23% said it is their most important deterrent. 51.90% of those who said it is their least important deterrent were males and 48.10%, females. 63.16% of those who claimed otherwise were male while 36.84% were female. 31.30% of the total number of males said it is their least important deterrent while 18.32% said it is their most important. On the other hand, 27.94% of the total number of females said it is their least important reason and 10.29% said it is their most important.

The Table 4.13 shows the responses to the various ranks of the deterrence of legal consequences as a percentage of gender.

Table 4.13: Degree of Deterrence of Legal Consequences According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	41	17	10	13	26	24	131
	31.30%	12.98%	7.63%	9.92%	19.85%	18.32%	100.00%
Female	38	16	29	24	15	14	136
	27.94%	11.76%	21.32%	17.65%	11.03%	10.29%	100.00%
Total	79	33	39	37	41	38	267
	29.59%	12.36%	14.61%	13.86%	15.36%	14.23%	100.00%

Source: Field Data

- ***Social Perception – “Society sees cannabis users as misfits”***

14.98% of the population said social perception is their least important reason for not using cannabis. This fraction of the population was 45% male and 55% female. On the other hand, 8.24% affirmed it is their most important deterrent. This fraction was both 50% male and female. 13.74% of the total number of males said negative social perception is their least important deterrent while 8.40% said it is their most important. 16.18% of the total number of females said it is their least important deterrent while 8.09% said it is their most important. Table 4.14 shows the responses to the various ranks of the deterrence of legal consequences as a percentage of gender.

Table 4.14: Degree of Deterrence of Social Perception According to Gender

Gender	Least important	Slightly important	Important	Very important	Significantly important	Most important	Total
Male	18	28	30	24	20	11	131
	13.74%	21.37%	22.90%	18.32%	15.27%	8.40%	100.00%
Female	22	33	25	23	22	11	136
	16.18%	24.26%	18.38%	16.91%	16.18%	8.09%	100.00%
Total	40	61	55	47	42	22	267
	14.98%	22.85%	20.60%	17.60%	15.73%	8.24%	100.00%

Source: Field Data

4.2.3 Other Findings

- ***Awareness of Ghana's Cannabis Law***

Two questions in the questionnaire assessed the respondents' knowledge of Ghana's law against cannabis use. Similarly structured, these two questions served as checks of each other to ascertain the respondents' certainty that there are laws in existence that render cannabis use an illegal practice. To the first question, "Is smoking cannabis illegal in Ghana?", 8.24% of the population answered "No", 70.07% answered "Yes" and 2.72% said they had "No idea". To the second, "Is there a law governing smoking cannabis in Ghana?", 2.62% answered "No", 56.18% answered "Yes" and 41.2% said they had "No idea".

129 respondents, representing 48.31% of the entire population were consistent in their stance that smoking cannabis is illegal and there is a law governing the practice in Ghana. 18.35% admitted that they had no idea to both questions. Table 4.15 shows a cross tabulation of the responses to the two questions.

Table 4.15: Awareness of Laws Governing Cannabis Use in Ghana

	Is there a law governing smoking cannabis in Ghana?			
Is smoking cannabis illegal in Ghana?	There is No Law	There is a Law	Not Sure	Total
It is Not Illegal	1	14	7	22
	14.29%	9.33%	6.36%	8.24%
It is Illegal	4	129	54	187
	57.14%	86.00%	49.09%	70.04%
Not Sure	2	7	49	58
	28.57%	4.67%	44.55%	21.72%
Total	7	150	110	267
	2.62%	56.18%	41.20%	100.00%

Source: Field Data

- **Reaction towards a Hypothetical Revocation of Ghana's Cannabis Law.**

To the question concerning whether or not they would use cannabis if the laws that make it illegal were revoked, 80.52% responded “No”, 6.74% responded “ Yes” and 12.73% said they had “No idea”. Table 4.16, Table 4.17 and Table 4.18 present the responses to the question based on the gender, religious distribution and affiliation to any particular religion respectively.

Table 4.16: Possibility of Cannabis Use According to Gender if Cannabis Laws were Revoked

Gender	Will Not Use	Will Use	Not Sure	Total
Male	100	12	19	131
	76.34%	9.16%	14.50%	100.00%
Female	115	6	15	136
	84.56%	4.41%	11.03%	100.00%
Total	215	18	34	267
	80.52%	6.74%	12.73%	100.00%

Source: Field Data

Table 4.17: Possibility of Cannabis Use According to Religious Affiliation if Cannabis Laws were Revoked

Religion	Will Not Use	Will Use	Not Sure	Total
African Traditional Religion	0	1	1	2
	0.00%	50.00%	50.00%	100.00%
Christianity	197	15	31	243
	81.07%	6.17%	12.76%	100.00%
Islam	17	0	1	18
	94.44%	0.00%	5.56%	100.00%
Total	214	16	33	263
	81.37%	6.08%	12.55%	100.00%

Source: Field Data

Table 4.18: Possibility of Cannabis Use According to Membership of a Religious Body if Cannabis Laws were Revoked

No specific religion	No	Yes	No idea	Total
No	214	16	33	263
	81.37%	6.08%	12.55%	100.00%
Yes	1	2	1	4
	25.00%	50.00%	25.00%	100.00%
Total	215	18	34	267
	80.52%	6.74%	12.73%	100.00%

Source: Field Data

- ***Perceptions of Deterrence of Sanctions against Cannabis***

To ascertain the degree to which existing sanctions deter students from using the drug, the respondents were asked to rank five sanctions wrought by prescribed cannabis law offences. 50.94% of the population finds the “not less than 10 years imprisonment” sanction against cannabis possession strongly deterring while 6.37% agree that it is “Not at all deterring”. The minimum 5-year jail term against using cannabis is held by 29.21% of the population as strongly deterring while 8.99% believe it is not in the least deterring. 45.32% of the population find the “minimum 10-year jail sentence for the importation and exportation of cannabis” strongly deterring. On the other hand, 8.99% do not find it deterring in the least. With regard to the cultivation of cannabis, which also attracts a minimum sentence of 10 years imprisonment, 41.57% find the sanction strongly deterring, while 10.11% thought otherwise. The use of property for cannabis

offenses is regarded by 43.82% of the population as strongly deterrent and by 6.74% as not at all deterrent.

4.3. Discussion of Findings

4.3.1. Deterrents of Cannabis Use – “What is your reason for not using cannabis?”

Just as the literature review brought to light, the research findings prove that legal consequences, fear of behavioural changes, fear of addiction, religion, social perception and health threats are factors that could deter students from using cannabis. The fact that out 267 respondents, only 30 students (11.2% of the population) do not consider any of these factors as deterrents to their use of cannabis says this much.

The literature review pointed the forenamed six factors as possible deterrents without making any distinctions as to which factors are more deterrent to which specific gender. The data collected however revealed that the female respondents are more deterred by the six factors than the males. To ascertain whether there exists a relationship of dependence between gender and the deterring factors, the Pearson Chi-Square values and asymptotic significance (P-value) were generated at a confidence level of 95%. This goodness of fit test was to test the following hypotheses:

$H_0 = \text{There is no association between gender and the deterrent in question}$

$H_1 = \text{There is an association between gender and the deterrent in question}$

A P-value greater than 0.05 means the null hypothesis, H_0 , must be accepted while a P-value less than 0.05 means the null hypothesis, H_0 , must be rejected for the alternative

hypothesis, H_1 . Table 4.19 shows the P-values generated for each of the six deterrents when cross tabulated against gender.

Table: 4.19 Pearson Chi-Square Test for the Relationship between Gender and each of the Six Deterrents

Statistic	Health Threats	Religion	Fear of Addiction	Fear of Behavioural Changes	Legal Consequences	Social Perception
Chi-Square Value	2.27	10.69	0.02	4.28	2.4	0.12
df	1	1	1	1	1	1
P-value Asymp. Sig(2-tailed)	0.132	0.001	0.88	0.039	0.121	0.733

Source: PSSP Chi-Square Test of Field Data

From Table 4.19, the null hypothesis can only be rejected for the religion and fear of behaviour deterrents.

$$P - \text{value} (\text{religiosity}) = 0.001$$

$$P - \text{value} < 0.05$$

$$\therefore \text{reject } H_0$$

$$P - \text{value} (\text{fear of behavioural change}) = 0.039$$

$$P - \text{value} < 0.05$$

$$\therefore \text{reject } H_0$$

The results show that there is a relationship of dependence between gender and religion and gender and the fear of behavioural changes.

In the literature review, Chitwood et al. (2008) and Felt et al (2008) have provided evidence that religion and spirituality may prevent an individual from using narcotics such as cannabis. In view of these claims by Chitwood et al. (2008) and Felt et al (2008), it was expected that respondents who subscribe to a religion would be more deterred than those who do not. To investigate whether or not there is such a relationship, a Chi-Square Test was conducted with the hypotheses:

$$H_0$$

= *There is no association between belonging to a religion and the deterrent in question*

$$H_1$$

= *There is an association between belonging to a religion and the deterrent in question*

Table 4.20 shows the P-values generated for each of the six deterrents when cross-tabulated against belonging to a religion.

Table 4.20: Pearson Chi-Square Test for the Relationship between Membership of a Religious Body and each of the Six Deterrents

Statistic	Health Threats	Religion	Fear of Addiction	Fear of Behavioural Changes	Legal Consequences	Social Perception
Chi-Square Value	7.47	2.59	0.23	1.39	0	0.03
df	1	1	1	1	1	1
P-value Assymp. Sig. (2-tailed)	0.006	0.107	0.635	0.239	0.961	0.852

Source: PSPP Chi-Square Test of Field Data

From Table 4.20, the null hypothesis can only be rejected for health threats.

$$P - value (health threats) = 0.006$$

$$P - value < 0.05$$

$$\therefore \text{reject } H_0$$

These results show that there is a relationship between religious membership and perceiving health threats as a deterrent to using cannabis. However, as was mentioned in the literature review, with reference to research by Gomes et al. (2012), it is difficult to identify the manner in which membership of a religion helps to deter students in this regard. In the literature review, the claim of Jang et al. (2008) that the main reason for the inverse relationships between religion and narcotic use is that religions promote prosocial behaviour and encourage individuals to lead normative lives. It was therefore expected that a relationship between religious membership and both legal consequences and social perception will be found by Chi-Square Test since the law and society's expectations largely constitute the prosocial behaviour belonging to a religion is said to inculcate. However, the results of the test revealed that for the study population, this is not the case.

The theoretical framework of the study categorized the six deterrents found in literature under the three categories (Attitudes towards the behaviour, Subjective Norms, Perceived Behaviour Control) Ajzen's (1991) theory of planned behaviour proposes. To confirm this categorization, a Factor Analysis using a correlation matrix was conducted.

According to Yong and Pearce (2013), “the broad purpose of Factor Analysis is to summarize data so that relationships and patterns can be easily interpreted and understood”. Factor Analysis generates components under which the variables, in this case, the six deterrents generate factor loadings. These factor loadings are reported in two forms, the unrotated and the rotated component matrix. However, the rotated component matrix is preferred because it is easier to interpret. Under each component, Hair et al (2010) recommend a minimum factor loading of 0.5 as significant to categorize variables. Table 4.21 is the Rotated Component Matrix showing the number of components generated as well as the factor loadings for each variable.

Table: 4.21: Rotated Component Matrix

	Component		
	1	2	3
Legal Consequences	-0.17	0.8	0.17
Health Threats	0.34	0.21	0.42
Social Perception	0.1	0.27	0.86
Fear of Behavioural Changes	0.85	0.06	0.12
Fear of Addiction	0.50	-0.1	0.43
Religion	0.41	0.67	0.16

Source: PSSP Factor Analysis of Field Data

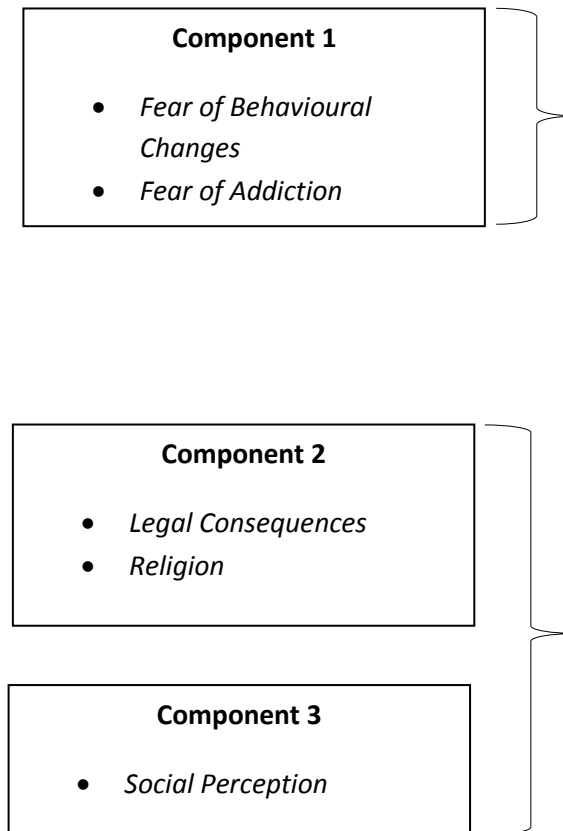
From Table 4.21, under Component 1, the *Fear of Behavioural Changes* and *Fear of Addiction* are the significant deterrents as they rendered factor loadings of 0.85 and 0.50 respectively. The significant deterrents under Component 2 are *Religion* and *Legal*

Consequences, which rendered factor loadings of 0.8 and 0.67 respectively. Finally, under Component 3, *Social Perception* is the significant deterrent rendering a factor loading of 0.86.

Based on the characteristics of the deterrents under each component, the components were re-named. Component 1 contains fears that emanate from an individual's impression of the effects cannabis may have on him or her as such the category is re-named *Internal Deterrents*. Component 2 and 3 contain rules, expectations and responsibilities conferred on an individual from external sources and is therefore re-named *External Deterrents*.

Interestingly, with the exception of its failure to include *Health Threats* in its grouping, the new categories of *External* and *Internal Deterrents* are corroborated by the theoretical framework of the study. The three categories under the theory of Planned Behaviour: Attitudes toward the Behaviour, Subjective Norms and Perceived Behaviour Control may be classified into *Internal* and *External Deterrents* as shown in Figure 4.4.

Factor Analysis



Theoretical Framework

Internal Deterrents

Attitudes towards the Behaviour

- *Health Threats*
- *Fear of Behavioural Changes*
- *Fear of Addiction*

External Deterrents

Subjective Norms

- *Social Perception*
- *Religion*

Perceived Behaviour Control

- *Fear of Behavioural Changes*
- *Fear of Addiction*

Figure 4.4: Factor Analysis from the Perspective of Theoretical Framework

Source: Author's Construct

4.4.2. Most Important Deterrents

Arranging the deterrents according to their scores for most important and least important deterrent in descending order of their capacity to influence the subjects renders the ranking shown in Table 4.22.

Table 4.22: Capacity of the Main Deterrents to Influence Subjects

Rank	Most Important Deterrent	Rank	Least Important Deterrent
1	Health Threats	1	Health Threats
2	Religion	2	Fear of Behavioural Changes
3	Fear of Addiction	3	Social Perception
4	Fear of Behavioural Changes	4	Religion
5	Legal Consequences	5	Addiction
6	Social Perception	6	Legal Consequences

Source: Field Data

Ideally, the deterrent that ranks first as the most important deterrent should also rank first as the least important deterrent as is the case with *health threats*. However, the other deterrents do not show the same behaviour as seen in the table above. Based on these findings, *health threats* are the most effective deterrent that can be pointed out as a deterrent to most students in the population. Even though there were mixed responses to the other deterrents, they could also be promoted as they certainly influence portions of the population.

4.4. Limitations of the Study

The major limitation encountered in this study was the inability to assess whether or not the respondents were actually non-cannabis users. Apart from giving their word orally that they were not, it was impossible to find out whether or not the students who answered the questionnaires used cannabis. Even though it may have been easier for a respondent who uses cannabis to admit this through a response to a direct question asked in the questionnaire, such a question was viewed by the Internal Review Board as too sensitive to be recorded in writing and so was omitted from the questionnaire. The respondents, who were handed physical questionnaires, were therefore asked orally whether they did not use cannabis to make sure they were non-users before they were handed the survey. Those who completed the electronic questionnaire on Google Forms were not asked this question orally. However, the consent form on the questionnaire asked for voluntary participation and it is hoped that anyone who felt uncomfortable participating in the survey by virtue of being a user did not complete the questionnaire.

Chapter 5 – Conclusion & Recommendations

This study set out to find out the most important deterrents of cannabis use among students in universities, by studying students of Ashesi University College. The results reveal that the deterrents of cannabis use are *health threats, religion, fear of addiction, fear of behavioural changes, legal consequences and social perception*. However, *health threats* is the deterrent with the highest capacity to influence a greater number of the population of study. This chapter summarizes the research findings and provides recommendations aimed at reducing the use of cannabis among the youth of Ghana.

5.1. Conclusion

Until the ill effects of cannabis can be eradicated and its benefits, harnessed to the fullest, there will always be the need to control its use, especially among the youth. A good way to do this is to capitalize on the factors that deter individuals from using it.

The research first sought to identify the deterring factors of using cannabis. By reviewing existing literature and finding out through a questionnaire, whether respondents could identify with the six deterrents that the literature provided, it was observed that *health threats, religion, fear of addiction, fear of behavioural changes, legal consequences and social perception* are indeed the common reasons why members of the population do not use cannabis. A good 9 out of every 10 respondents in the population could identify with at least one of these deterrents provided by the literature. *Personal disinterest and irrational expenditure of resources* were the popular deterrents that respondents provided outside the forenamed deterrents offered by literature.

It was also observed that more females than males felt deterred by the six deterrents. However, a Chi-Square Test dismissed the possibility of a relationship between gender and perceived deterrence except with regard to two of the deterrents: *religion* and the *fear of behavioural changes*. Researchers Jang et al (2008) implied a relationship between religious membership and *legal consequences* and *social perception*. However, the Chi-Square Test also dismissed this idea and instead pointed to a relationship between religious membership and *health threats*.

Based on the responses to what prevents them from using cannabis, a Factor Analysis was conducted to categorize the deterrents. This analysis rendered three groupings that were further condensed into two categories, *Internal and External Deterrents*. *Fear of addiction and fear of behavioural changes* were placed under *Internal Deterrents* while *legal consequences, religion and social perception* were placed under *External Deterrents*. With the exception of its exclusion of *health threats*, this categorization corresponds to the classification generated for the theoretical framework of the study based on the Theory of Planned Behaviour.

Next, the research aimed at ranking the deterring factors of using cannabis. By asking the respondents to specify their most important deterring factor down to their least important deterring factor to using cannabis, it was observed that *health threats* were the most important disincentive to using the drug. 5 out of every 10 respondents in the population upheld this factor as their most important deterrent while a mere 1 out of every 10 respondents claimed it was their least important deterrent. *Religion, fear of addiction, fear of behavioural changes, legal consequences and social perception* followed *health threats* in order of most important deterrent. Following these results,

although the other factors play a role in deterring certain proportions of youth, emphasis must be laid on *health threats* as it has been shown to influence a greater number of individuals.

Finally, the research aimed at making recommendations to reduce the use of cannabis among the youth of the country. These recommendations revolve around educating the youth on the negative effects cannabis could have on health and are outlined in the ensuing paragraphs.

5.2. Recommendations

5.2.1. Further Research

Although the research established *health threats* as the most important deterrent to a large number of students, further research needs to be conducted to find out the most important deterrent of students who said *health threats* are their least important deterrent. These other deterrents should be promoted as an attempt to reach out to the minority who are not as deterred by *health threats* as others.

The Chi-Square Test conducted in the research revealed that there is a relationship between gender and *religion* and gender and the *fear of behavioural changes* as deterrents. Another Chi-Square Test also pointed out a relationship between membership of a religious body and *health threats*. In view of these findings, further research needs to be conducted to find out how exactly gender causes an individual to be deterred by *religion* and the *fear of behavioural changes*. Likewise, there is the need for investigation into the manner in which membership of a religious body causes an

individual to be deterred by *health threats*. Findings from this subsequent research would inform the channels through which individuals are reached based on their gender and religious membership.

5.2.2. Educational Campaigns on Health Threats

Health threats are a huge deterrent to most of the students sampled from Ashesi University College and may serve as disincentives to the use of cannabis by the youth in Ghana. In view of this, a multi-sectorial collaboration of the Narcotics Control Board, Ministry of Health, Ghana Health Service, Ministry of Education, Ministry of Youth and Sports, civic societies and rehabilitation centers across the country is required. Educational campaigns should be organized to inform the public on the ill effects cannabis has on the mental and physical wellbeing of individuals who use it. NACOB is reported to have conducted a similar campaign in 2009, focusing on the “harmful effects of illicit drugs on the economic, social, political and cultural aspects of the country and its security”. However, education on health dangers on cannabis in particular would be more effective since the research has revealed the premium young people place on their health. In addition, since studies by researchers such as Hall and Lynskey (2005) have asserted a relationship between the use of cannabis and other more potent drugs such as heroin and cocaine, focusing on cannabis has the potential of ultimately reducing the use of other harmful narcotics.

Identification and involvement of *Cannabis Ambassadors* could be another way the forenamed agencies could educate the youth on cannabis’ negative effect on health. *Cannabis Ambassadors* could be:

1. Individuals whose direct abuse of cannabis resulted in either serious physical or mental health implications but have come clean off the drug through rehabilitation.
2. Individuals who have lost loved ones to the abuse of cannabis.
3. Renowned individuals who have following and are committed to the vision of reducing the use of the drug in the country. A cue can be taken from Emmanuel Kofi Botwe a.k.a. “Kwaw Kese” who according to Mensah-Tsortorme (2015), is now committed to educating the youth about the demerits of cannabis after being arrested on November 22nd 2014 for smoking the drug.

Finally, considering that *religion* came second in the ranking of the most important deterrent of using cannabis, the government and other agencies could educate religious leaders and institutions on the dangers of using cannabis and subsequently partner with them to educate the youth on the subject.

References

- Argrawal, A., & Lynskey T. M. (2009) Tobacco and Cannabis Co-occurrence: Does Route of Administration Matter? *Drug and Alcohol Dependence* 99(1-3)240–247
- Akyeampong, E. (2005). Diaspora and Drug Trafficking in West Africa: A Case Study of Ghana. *African Affairs* 104(416): 429-447.
- Ahmed, S. (2009). Methods in Survey Sampling Biostat 140.640 Stratified Sampling. Retrieved from <http://ocw.jhsph.edu/courses/statmethodsforssurveys/PDFs/Lecture4.pdf>
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* 50 179–211.
- American Academy of Ophthalmology (2014) Does Marijuana Help Treat Glaucoma? Retrieved from <http://www.geteyesmart.org/eyesmart/living/medical-marijuana-glaucoma-treatment.cfm>
- American College of Physicians (2008). Supporting Research into the Therapeutic Role of Marijuana.
- American Society of Cancer. (2014, Aug 26). Marijuana. Retrieved from <http://www.cancer.org/treatment/treatmentsandsideeffects/complementaryandalternativemedicine/herbsvitaminsandminerals/marijuana>
- Awlesu, F. K. (2014, Nov 18). 50,000 People Abuse Drugs in Ghana resulting in 70% Mad Cases. Today. Retrieved from <http://www.todaygh.com/2014/11/18/50000-people-abuse-drugs-ghana-resulting-70-mad-cases/>
- BBC News., (2003, October 13). Marijuana Smoking Damages Sperm. BBC News. Retrieved from <http://news.bbc.co.uk/2/hi/health/3186686.stm>
- Benavie, A. (2009). *Drugs: America's Holy War*. Routledge

- Borgelt, L. M., Franson, K. L., & Nussbaum, A. M. (2013). The Pharmacologic and Clinical Effects. *Pharmacotherapy* 33(2), 195 – 209.
https://www.wsma.org/doc_library/LegalResourceCenter/MedicalCannabis/Med%20Mar%20-%20Pharmacologic%20and%20Clinical%20Effects.pdf
- Bortoff, J. L., Bissel, J.L. L., Balneves, L. G., Oliffe, John L., Reille N. C., & Buxton J., (2013). Perceptions of Cannabis as a Stigmatized Medicine: A Qualitative Descriptive Study. *Harm Reduction Journal*. v. 10 Retrieved from
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584982/>
- Bryman, A. (2004). *Social Research Methods (2nd edition)*. Oxford: Oxford University Press
- Campbell, F. A., Martin, R. T, Dawn C., Reynolds D. J. M., Moore R. A., & McQuay H. J., (2001). Are Cannabinoids an Effective and Safe Treatment Option in the Management of pain? A Qualitative Systematic Review. *British Medical Journal*, 323(7303):13
- Chao T., Barnett S., (2012, August 27). Teenage Marijuana Use May Hurt Future IQ. *ABC News*. Retrieved from <http://fullcircletreatmentcenter.org/get-help/august-newsletter/>
- Charng, H., Piliavin J. A. & Callero, P. L. (1988). Role Identity and Reasoned Action in the Prediction of Repeated Behaviour. *Social Psychology Quarterly* 51 (4) 303-317
- Chitwood, D. D., Weiss, M. L., & Leukefeld, C. G. (2008). A Systematic Review of Recent Literature on Religiosity and Substance. *Journal of Drug Issues* 38 653–688.
- Conner, M., & McMillan, B. (1999). Interaction Effects in the Theory of Planned Behavior: Studying Cannabis Use. *British Journal of Social Psychology* 38 195-222.

Dinges, M., & Oetting, E.R. (1993). Similarity in Drug Use Patterns among Friends.

European Communities. (2009). *A Report on Global Illicits Markets 1998 – 2007*
Netherlands

European Monitoring Centre for Drugs and Drug Addiction. (13 August 2011).
Cannabis. Retrieved March 24, 2015, from
<http://www.emcdda.europa.eu/topics/cannabis>

Ganu, D., (2013). Religious Factors and the Use of Drugs among Seventh-day
Adventists in Ghana. *Journal of Biology, Agriculture and Healthcare* 3 (5)

Global School-Based Student Health Survey (2008). *Ghana Report Senior High
Schools* Retrieved from
http://www.who.int/chp/gshs/2008_Ghana_GSHS_Country_Report.pdf

Goffman, Ervin. ([1963] *Stigma; notes on the management of spoiled identity* Englewood
Cliffs, N.J., Prentice-Hall

Gomes, F. C., Andrade, A. G., Izbicki, R., Almeida, A. M., & Oliveira, L. G. (2013).
Religion as a Protector Factor against Drug Use among Brazilian University
Students: A national survey. *Revista Brasileira de Psiquiatria*, 35, 29–37.

Goode, E. (2005). *Drugs in American Society*. McGraw-Hill: New York, NY.

Grush, L., (2014, June 5). Marijuana Use may affect the Size and Shape of Men's
Sperm. *Fox News*. Retrieved from
<http://www.foxnews.com/health/2014/06/05/marijuana-use-may-affect-size-and-shape-men-sperm/>

Hall, W. D., & Lynskey, M. (2005). Is Cannabis a Gateway Drug? Testing Hypotheses
about the Relationship between Cannabis Use and the Use of Other Illicit Drugs.
Drug and Alcohol Review, 24, 39-48.

Health Committee (1998). Inquiry into the Mental Health Effects of Cannabis. *AJHR*, 1.6A, p. 15.

Health Committee (2003). Inquiry into Health Strategies and Legal Options for Cannabis. *AJHR* 1.6C

Hubbard J. R., Franco S. E., & Onaivi E.S., (1999). Marijuana: Medical Implications. *American Family Physician*. 60(9), 2583-3588.
<http://www.aafp.org/afp/1999/1201/p2583.html>

International Narcotics Control Strategy Report (2012). *Drug and Chemical Control* (INCS Volume 1)

Iversen, L. L. (2000). *The Science of Marijuana*. Oxford University Press.

Jafaru, M. Y., (2014, March 20). Calls to Legalise Marijuana is Dangerous -- Dr Akwasi Osei. *The Daily Graphic*. Retrieved from <http://thechronicle.com.gh/marijuana-ntampi-usage-in-ghana/>

Jang, Joon S. Bader D., & Johnson B.R. (2008). The Cumulative Advantage of Religiosity in Preventing Drug Use. *Journal of Drug Issues* 38:771–798.

Kennedy A. K., (2014, March 19). The Marijuana Debate: Should We Legalize corruption, prostitution and murder too? *Graphic Online*. Retrieved from <http://graphic.com.gh/features/opinion/19729-the-marijuana-debate-should-we-legalize-corruption-prostitution-and-murder-too.html#sthash.9zNaQxtq.dpuf>

Korley N. L., (2014, July 18). Don't Legalise Wee. *Graphic Online* Retrieved from <http://graphic.com.gh/news/general-news/27282-don-t-legalise-wee-chief-psychiatrist.html>

Leggett, T. (2006). *Cannabis: Why should we care?* Vienna: Chapter 2 of World Drugs Report 2006, UNODC.

McBride, D., VanderWaal, C., & Terry-McElrath, Y. (2001). *The Drugs-Crime Wars: Past, Present, and Future Directions in Theory, Policy and Program Interventions*

Miller, W. R. (1998). Researching the spiritual dimensions of alcohol and other drug problems.

Miller, W., Forcehimes, A., O'Leary M., Lanoue, M., (2008). Spiritual direction in addiction treatment: Two clinical trials *Journal of Substance Abuse Treatment*, 35 (4), 434-442 DOI: 10.1016/j.jsat.2008.02.004 - See more at: <http://www.patheos.com/blogs/epiphenom/2009/02/spiritual-guidance-doesnt-help.html#sthash.ARs2APWI.dpuf>

Ministry of Health/World Health Organization (2003). A National Survey on Prevalence and Social Consequences by Substance (drug) Use among Second Cycle and out of School Youth in Ghana Research Report. Retrieved http://www.who.int/countries/gha/publications/substance_abuse_report.pdf

National Institute on Drug Abuse (2014). Marijuana Retrieved from <http://www.drugabuse.gov/drugs-abuse/marijuana>

Office of Environmental Health Hazard Assessment (2009). *Evidence on the Carcinogenicity of Marijuana Smoke*. Retrieved from http://oehha.ca.gov/Prop65/hazard_ident/pdf_zip/FinalMJsmokeHID.pdf

Reuben, N. Y., (2014, November 29). Legalise Wee, After All We are All Hypocrites - AUCC lecturer. *GhanaWeb* Retrieved from <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=337083>

Selby, H., (2011, May 4). Marijuana (ntampi) Usage in Ghana. *The Ghanaian Chronicle*. Retrieved from <http://thechronicle.com.gh/marijuana-ntampi-usage-in-ghana/>

Shilts, L. (1991). The Relationship of early Adolescent Substance Use to Extracurricular Activities, Peer Influence and Personal Attitudes. *Adolescence* 26(103) 613-617.

Smart, R. G., Hughes, P. H., Johnston, L. D., Anumone, A., Khant, U., Medina Mora M. E., Navaratnam, V., Poshyachinda, V., Varma, V. K., & Wadud, K.A. (1980). A Methodolodology for Student Drug Use Surveryys. (WHO Offset Publication No. 50). Geneva, Switzerland.

United Nations Office on Drugs and Crime (2007). World Drug Report

United Nations Office on Drugs and Crime (2011). Cannabis, A Short Review

Verweij, K. J. H., BZietsch, B. P., Lynskey, T. M., Medland, S. E., Neale, M. C., Martin N. G., Boomsma D. I., & Vink J.M. (2010). Genetic and Environmental Influences on Cannabis Use Initiation and Problematic Use: a Meta-Analysis of Twin Studies. *PubMed Central* 105(3) 417–430.

Wallace, J.M., Myers, V.L., & Osai, E.R. (2004). *Faith matters: Race/ethnicity, religion and substance use*. Baltimore, MD: The Annie E. Casey Foundation. [Available as a PDF at <http://www.aecf.org/publications/browse.php?filter=21> and http://www.aecf.org/publications/data/1_04_585_faith_matters_report.pdf]

Webb, E., Ashton, C. H., Kelly, P., & Kamali, F., Alcohol and Drug use in UK University Students. *The Lancet*, 348 (9032), 922–925.
<http://www.sciencedirect.com/science/article/pii/S0140673696034101>

Western Sydney Drug and Alcohol Resource Centre (2012). Cannabis and Aggression Retrieved from <http://www.substance.org.au/imagesDB/wysiwyg/FS-CannabisandAgressionGeneral.pdf>

Wolf, J. (2008) Self-Administered Questionnaire Retrieved from <http://srmo.sagepub.com/view/encyclopedia-of-survey-research-methods/n522.xml>

World Health Organization (1980). A Methodology for Student-Drug Use Surveys. Retrieved from http://whqlibdoc.who.int/offset/WHO_OFFSET_50.pdf

World Health Organization. (2015). Management of Substance Abuse. Retrieved from http://www.who.int/substance_abuse/facts/cannabis/en/

Yablon, D. R. (2011) *The Effect of Drug Decriminalization in Portugal on Homicide and Drug Mortality Rates*. University of California, Berkeley.

Appendix

Questionnaire for Ashesi University College Respondents

This questionnaire is for a research effort to find out “**The Factors That Deter Students from Using Cannabis a.k.a (marijuana, ganja, ntaampi, abonsam tawa, wee, Indian hemp)**”. Participation is **voluntary** and respondents may withdraw at any time without any penalty. It will take **10 minutes** of your time. All information given out will be treated confidentially. This study and consent form has been reviewed by Ashesi IRB for Human Subjects Research. For further information contact the committee through irb@ashesi.edu.gh

- | | |
|--|---|
| <p>1. Gender</p> <p><input type="radio"/> Male</p> <p><input type="radio"/> Female</p> <p>2. Age Group</p> <p><input type="radio"/> 15-20</p> <p><input type="radio"/> 21-25</p> <p><input type="radio"/> 26-30</p> <p><input type="radio"/> 31 – 35</p> <p><input type="radio"/> Above 35</p> <p>3. Year</p> <p><input type="radio"/> Level 100</p> <p><input type="radio"/> Level 200</p> <p><input type="radio"/> Level 300</p> <p><input type="radio"/> Level 400</p> <p><input type="radio"/> Post Graduate</p> <p>4. Religion</p> <p><input type="radio"/> African Traditional Religion</p> <p><input type="radio"/> Buddhism</p> <p><input type="radio"/> Christianity</p> <p><input type="radio"/> Islam</p> <p><input type="radio"/> Rastafarianism</p> | <p>6. Is there a law governing smoking cannabis in Ghana?</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No idea</p> <p>7. What is your reason for not using cannabis?
Please tick as many as apply to you.</p> <p><input type="radio"/> The laws of Ghana make its use illegal</p> <p><input type="radio"/> Cannabis is dangerous to mental health and wellbeing</p> <p><input type="radio"/> Society sees cannabis users as misfits</p> <p><input type="radio"/> I do not know what kind of behaviour I will exhibit when I use cannabis</p> <p><input type="radio"/> I do not want to get addicted to cannabis</p> <p><input type="radio"/> My religion forbids the use of narcotics</p> <p><input type="radio"/> Other (please state)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>8. Do you have any beliefs against using cannabis?</p> <p><input type="radio"/> Religious</p> <p><input type="radio"/> Cultural</p> <p><input type="radio"/> Legal</p> <p><input type="radio"/> None</p> |
|--|---|

☐ Other (*please state*)

☐ Other (*please state*)

5. Is smoking cannabis illegal in Ghana?

- ☐ No
☐ Yes
☐ No idea

Rank each of the following reasons why you have never used cannabis according to the degree of importance, with '1' being the *least important* and '6', the *most important* reason.

	Reasons	Rank
9.	The laws of Ghana make its use illegal	
10.	Cannabis is dangerous to mental health and wellbeing	
11.	Society sees cannabis users as misfits	
12.	Fear of the behaviour I will exhibit when I use cannabis	
13.	Fear of addiction to cannabis	
14.	My religion forbids the use of narcotics	

By circling on the scale of '1' to '5', with '1' signifying **not at all deterring** and '5' **very deterring**, complete this table based on how deterring you find the sanctions on cannabis.

	Offence	Sanction	Not at all detering	>	>	>	>	>	Very detering
15.	Possession of cannabis	Not less than 10 years imprisonment	1	2	3	4	5		
16.	Using cannabis (smoking, sniffing, consuming or injecting into the body)	Not less than 5 years imprisonment	1	2	3	4	5		
17.	Importation or exportation of cannabis	Not less than 10 years imprisonment	1	2	3	4	5		
18.	Cultivation of cannabis	Not less than 10 years imprisonment	1	2	3	4	5		
19.	Use of property for cannabis offences	Not less than 10 years imprisonment	1	2	3	4	5		

20. Would you use cannabis if the current laws that make it illegal were revoked?

- ☐ No
☐ Yes
☐ No idea

21. Any other comments?

Thank you for responding.